The American Astronomer

THE QUARTERLY NEWSLETTER OF
THE AMERICAN ASSOCIATION OF AMATEUR ASTRONOMERS

Volume III, No. 4 September 1999

Observing the August 11th

A Miracle Near Munich

by Ernie Piini, AAAA
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Do you believe in miracles? I do. After a cliff-hanger experience in Germany - it can happen.

Early on the morning of August 11th in Einsbach, Germany, our home away from home for the eclipse, the sun rose against a beautifully clear blue sky. It was like India in 1995 and Australia in February 1999. Not a cloud in the entire sky.

After breakfast I made a call to Beth Yule, the tour agent for Amateur Astronomers Inc. (AAI) from New Jersey, for instructions as to where to join her group. I've known Beth and members of AAI since the eclipse expedition to the African Sahara Desert in 1973 and I was pleased that she invited us along, and also had a chance to meet eclipse chasing friends of old.

We met on a soccer field in the small town of Altomunster, Germany, which lies very close to the eclipse centerline about 30 km (18 miles) northwest of Munich (Latitude: 48º, 23', 05" N; Longitude: 11º. 14', 50" E. to be exact). When we arrived the sky was completely overcast with a threat of rain. My cousin, Mienrado Pifferini, a huge and strong Swiss and youngest of a family of 16, carried my telescope and mount to the site as if they were toys. There we set up next to Joe and LaVonne Shrock, good friends of mine from Mt. View, California.

The telescope at this point was only partially assembled, with another half-hour of set-up and alignment to go. For the first time in 21 eclipses, I was forced to set up while it was raining. About this time, I began to wonder if this was all worth it, and did we have a chance to see the eclipse? Totality was still three hours away.

I waited about an hour before I could focus my two telescopes and the camcorder. By then, the sun was playing peek-a-boo with the clouds, and such moments made it possible to focus with the filter off.

First contact was reported at around 11:12 a.m. With totality scheduled to occur around 12:36 p.m., the hour-plus wait was agonizing. We saw small blue sky openings far to the West and much time was spent studying the distance, direction of travel, and point of possible interception with the eclipsing sun. A couple of these clearings came too soon and moved past our site. More rain and even a sound of thunder off in the distance made our chances even more gloomy. But one clearing had the necessary ingredients if all conditions held. And they did!

At 12:36:31 p.m., second contact occurred with a show of Baily's Beads and a brilliant "Diamond Ring". I ran off 14 one-second exposures using Kodak Royal-400 print film with my 3-Way Telescope equipped with my special U2 filter. This filter is designed to eliminate much of the stray corona around the eclipsed sun and enhance the beautiful coronal streamers. Since this eclipse occurred during a maximum sunspot period, the shape of the corona was quite symmetrical but spiky.

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Total Solar Eclipse, near 2nd Contact leaving the clouds, August 11, 1999.
Taken at Altomusnter, Germany, approx. 30 km (18 mi) NW of Munich, with a 3-way telescope, f/7, U2 Filter, on Kodak Royal Gold 400 film. 1-second exposure.
Photo by Ernie Piini

Dick Adduci and Jack Foster Earn Observing Awards

A big congratulations to **Dick Adduci** of Eagle, WI, for receiving the Arp Peculiar Galaxy Certificate. Dick CCD imaged over 100 Arp Peculiar Galaxies using a 12-inch S/C telescope and an ST-7 CCD. Dick is only the seventh amateur in the country to image 100 Arp Peculiar Galaxies. Nice job, Dick. We are proud of you.

Jack Foster of Rockford, IL, earned the Binocular Messier Club Certificate for observing and logging over 50 Messier objects using 7x50 binoculars. Jack was very methodical as he planned out a program and then followed through season after season. Way to go, Jack.

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

President's Letter

This past quarter has been a very busy time for your club, the AAAA, with lot's of new things coming your way. But first, let's talk about the great things that our club members are doing.

A big congratulations to Dick Adduci of Eagle, Wi. for receiving the Arp Peculiar Galaxy Certificate. Dick CCD imaged over 100 Arp Peculiar Galaxies using a twelve inch S/C telescope and an ST-7 CCD. Dick is only the seventh amateur in the country to image 100 Arp Peculiar Galaxies. Nice job, Dick. We are proud of you. Also, Jack Foster of Rockford, Il. earned the Binocular Messier Club Certificate for observing and logging over 50 Messier objects using 7x50 binoculars. Jack was very methodical as he planned out a program and then followed through season after season. Way to go, Jack. We are glad you are a member of the AAAA. And finally, our own Assistant Editor, Brenda Culbertson, was named Director of the Washburn University of Topeka Planetarium and Observatory. The observatory is Crane Observatory, where the 100-year-old Warner & Swasey refractor is used as the main instrument. Not only that, but Brenda helped refurbish this classic instrument and was then asked to write an article for publication in the Journal of the Antique Telescope Society. Don't you just hate it when someone gets paid for doing something they love to do? I'm jealous. We wish you all the best in your new position, Brenda.

And there is even more. The AAAA has arranged for its membership to get a discount subscription to *The Practical Observer*, a quarterly magazine with observing tips and observing articles that you usually don't find in the major magazines. The regular subscription rate is $14 per year, but AAAA members can get a subscription for only $12 per year. You can find a subscription form on our web page, or just send us a check for $12, and we will sign you up.

And how would you like to get into amateur astronomy for under $100.00? Most people pay thousands of dollars to be an amateur astronomer, but the AAAA is putting together a kit that will get you into the hobby, and give you the tools to start observing on your own, for less money than you would imagine. Our kit will include a nice pair of 10X50 binoculars, a one year membership in the AAAA, a planisphere, a star chart, a book on binocular observing, and a comet, lunar, and solar guide, all for under $100.00. What better way to get a friend, relative, family member, or the student down the street into the hobby without spending a fortune? Look for more information on this wonderful kit elsewhere in the newsletter.

And if you haven't visited the AAAA web site lately, you should give it a look. Our webmaster, Ed Flaspoehler, has been busy as a beaver sprucing up the site, making it a little easier to get around, and then updating some of the astronomical resources our site has become known for. He has added major information to the Planetary Home Page, and also increased the data in the Constellation Home Page. Check it out and tell us what you think.

Finally, we still want to hear from you. Tell us what you are doing and what you would like to see the AAAA do. You don't have to write a major article, just a letter or e-mail will be fine. And then we will share it with your fellow club members. As you can see, there are lots of exciting things going on in the AAAA, and there will be more to follow. Look for a special little surprise in the mail from the AAAA in the near future.

Best always,

John Wagoner—President
American Association of Amateur Astronomers

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.

AAAA Letters

Urban Club Progress

Hi Mr. Wagoner and all of the AAAA:

I have heard it quoted by both the military and the NFL that "Luck is when preparation meets with opportunity." I ran into just such luck on July 5 when the sky was suddenly as clear as I had seen in months.

For the previous three weeks, (during times of either thick clouds or full moon) I had gone through the Urban Club list, finding objects on different planetarium programs, plotting charts, choosing guide stars to calibrate my setting circles, and generally planning what I was going to try to capture during the month of July. I made a list of 26 of the objects, and plotted different charts showing their position, to cover the hours of dusk to midnight.

I was going to wait until after July 7, for the last quarter moon to pass, but on the night of July 5, the sky looked so good that I took the LX50 8-inch f/10 onto the back patio. Here in Yorba Linda the Milky Way is never even close to being visible, but this night looked both clear (relatively) and stable. Since I had an observing program mapped out and ready to go, it turned out to be easy to log all 26 objects (one quarter of the Urban Club list! in one night. This took four hours to do, especially since I did not want to hurry past each object, but rather study and enjoy it. I saw most of the items given on the Urban Club list between NGC6210 and NGC7243. I finished at 1:30am, much later than I had expected to stay up. As I was putting my equipment away, the moon, nearing last quarter, came up over the hill.

I would like to express my appreciation for the Urban Club. Many of these objects would never have come to my attention otherwise, like some of the planetary nebulae that I would not have guessed would be visible from here, as well as many of the beautiful small open clusters. My confidence in being able to find worthwhile objects from home has greatly increased.

I'm now nearing halfway completion of the program.

Thanks again

Bill Domino, member AAAA
WJDomino@aol.com

Astro-Geek

Hi John,

First of all, thank you for highlighting my AstroGeek homepage in the last AAAA newsletter. It was quite a treat to see it in there. AND, I really appreciated your comment about my meticulous double-star log sheets. I savored every moment of that 100-star journey!!

Recently, an editor from Sky & Telescope magazine contacted me to ask for an article about our mysterious 'moving star'. I sent in an article and illustration to the magazine. I have a feeling that my article will be rewritten by the editor. However, I am sending you the same information in the attached document. Feel free to use it as you wish.

Thanks again,

Stephen LaFlamme, "AstroGeek"
astro-geek@erols.com

Ron's Satellite Images

Ron:

I have gotten your page of satellite images on-line. Go check it out. You can find the link on our index page.

Thanks for sending the great shots. And thanks for being a member of the AAAA

Ed Flaspoehler, Vice President, AAAA
http://www.corvus.com

Ed:

I just wanted to let you know that I checked out the satellite site at AAAA. They look great! I am sure the AAAA members will enjoy them. You did an excellent job displaying them. The only thing I noticed was the time of the Space Shuttle Discovery Launch photo should be 6:49 am and not pm. Again, thanks for accepting and displaying my astrophotos. It is a pleasure beinga member of AAAA. Hope to have more astrophotos for AAAA in the near future.

Ron Zincone
rzincone@uri.edu

AAAA Membership

John,

I received the AAAA Membership packet from you. Thank you.

In the '70's I was a student studying to get my PHD in Astronomy, but another child entered the picture and I had to go work. I had several (over 5) years of notes photos, etc. I had variables to planets. I went out every night when it was clear. Nothing could keep me from my 2.4 inch telescope and the sky. About 6 months before entering the service, I bought a 6-inch reflector, which I still have. I only used the 6-inch for a couple of months. Since the late 70's I haven't used the reflector.

Now I have gotten it up and cleaned and painted the pedestal, etc. But the main and secondary mirrors are shot. I have tried to find a company that accepts credit cards to redo the mirror but to no avail. But I'll keep looking. I am also a pastor and a street rodder. My twin sons and I are working on a '48 Olds, hoping to get it on the road soon. Again thank you for the info.

Starry Starry Night !!

Dennis Bulan
bdbula@budget.state.ny.us

Stellafane Update

Prison Approved

The final vote is in. On September 14, the town of Springfield, Vermont, voted to accept a state prison to be built within 3 miles of the historic Stellafane observing site. Here's the election results from Springfield.

2345—FOR and 1535—AGAINST

You can find out more about the issues involved by visiting the Stellafane web site: www.stellafane.com

Now that the election has been decided in favor of the prison, Bob Gent, Astronomical League Vice President, and Public Relations Officer for the International Dark-Sky Association, has been traveling to Vermont to discuss prison lighting techniques with local officials, Springfield town members, and members of the Springfield Telescope Makers, the club that sponsors the annual Stellafane Convention. Bob Has been very active in trying to provide accurate information during the discussions held in Springfield prior to this final election by the town.

This decision marks a watershed in the fight against light pollution by the Astronomical Community. For the first time, invasive light pollution has been officially approved near an important astronomical institution, with total disregard for anything but governmental interests. A case like this is an object lesson in how encroaching light pollution can destroy an important part of the night sky for amateur astronomers, and how little influence national public opinion can have on a local issue.

One way to help is to join the International Dark-Sky Association, 3225 N. First Avenue, Tucson, Arizona 85719-2103 USA, Phone: 520-293-3198, E-mail: ida@darksky.org

www.darksky.org

A Miracle Near Munich

Continued from page 1

My C-90 telescope, which rides piggyback on the 3-way telescope, captured the fast changing display of Baily's Beads, Diamond Ring, and rosy red prominences, using Kodak Royal-100 print film. I made 27 exposures each at 1/60th second.

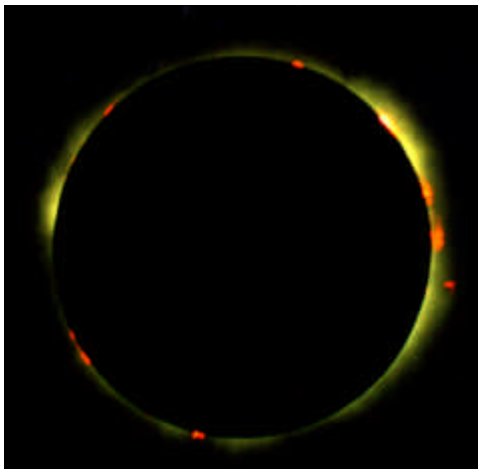
My Canon 2000 camcorder is bracketed to one side of the 3-Way Telescope. I use it to record exact timings of totality events plus any other event which might require a wide angle view.

Since all my cameras are remotely controlled, running off over 40 exposures is easily done. I had time to allow several of my cousins to peer into my C-90 Telescope and gaze at the garden of rosy red prominences. I counted eight artistically spaced magnetic storms around the black disc of the moon. One of the prominences had a section that was disconnected and in space.

This eclipse was a real beauty. Was it because we prayed so hard for the sky to clear or was it simply an exceptional sight? The planet Venus was hidden behind some clouds but I finally got to see it moments after third contact. Third contact was recorded at 12:38:48 p.m., making our total eclipse time 2 minutes and 17 seconds. Minutes later the sky became totally overcast with threat of more rain.

During the eclipse, the temperature dropped 8º, from 69 º F around 11:45 a.m. to 61º F shortly after the end of totality. The humidity varied between 95 and 100 percent, as would be expected in rainy weather. The wind was mild during the entire event with only a slight breeze during totality. No shadow bands were seen, as the green grass of the soccer field made it difficult to see the minute changes in contrast.

That evening, the entire AAI group and our contingent from Switzerland, enjoyed a dinner party hosted by Beth Yule. A one-man orchestra played a variety of German music on his piano and accordion. He even played John Denver's "Country Road" for our group. This was the song played at Meinrado and Sabrina Pifferini's wedding earlier this year. Their wedding party parade of two busses included a donkey that was transported by trailer to the church ceremony. There the animal was side-saddled with traditional wedding candies and was a hit for all who attended.



The Solar Corona, August 11, 1999, *taken with a 3-way telescope, f/7, U2 Filter, using Kodak Royal Gold 400 film, 1 second exposure. Note the symmetry of the corona, typical for a period of maximum sunspot activity.* **A Garden of Prominences encircles the totally eclipsed sun,** *taken with a a C-90 telescope, f/11, using Kodak Royal Gold 100 film at 1/60 sec. Photos taken at Altomusnter, Germany, by Ernie Piini.*

Our side trips before and after the eclipse included much of the picturesque country in Switzerland where my parents and elder brothers and sister came from before moving to the United States. The valleys, shouldered by the shear cliffs of the alps and speckled with homes built totally with rocks, is a sight to behold. We even took a walk up to the home where my family resided and laughed at the second-story balcony in which my brother Enos, then 5-years old, fell off onto the dirt path below.

My mother used to tell us about the thunder and lightning that occurs in the alps. For about three nights in a row they happened. I was petrified at how noisy and scary it gets. It rains simultaneously hard and steady and the clouds diffuse each lightning bolt.

Finally I must say that the eclipse was truly a miracle. I've had the opportunity to see many eclipses in the past but I prayed that my brother and cousins would get to see this one. They may never go to see another but this will surely remain in their memories as long as they live. *Viva el eclisse!*

The miracle eclipse in a nutshell

by May Coon

Ernie, video, 3 camera ----------	Invention
Eclipse map ----------	Intention
Weather at first ----------	Attention
Cloudy ----------	Contention
Eclipse clearing ----------	Suspension
Wipe brow ----------	Sustention

I wish to thank Joe Heim and May Coon for their assistance in editing this article.

The Eclipse from Stuttgart

by Isaac M. Kikawada, AAAA
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We three Total-Solar-Eclipse initiates, Andy Fu, Heidi and Isaac Kikawada, were at Sindelfingen, a town just south of Stuttgart. As we woke up on the morning of August 11, 1999, a light rain greeted us, and it continued during our breakfast and into the late morning. But we were determined to experience the Eclipse in spit of the rain and overcast. Andy and Heidi decided to join the crowd at the City park near by, but I opted for staying on the hotel terrace, where I found a little canopy to shield my Pronto from the rain.

It sprinkled till about noon, but dark clouds still loomed over us. It was almost 12:20 when the clouds just barely thinned out around the Sun, and a thin crescent winked at us off and on through the clouds for several seconds at a time. I invited the handful of people on the terrace to look though my telescope - they all saw the disfigured Sun constantly scraped by the tendrils of fast moving clouds, clouds which often totally obscured the thin crescent Sun itself.

At 12:30, the cloud completely covered the Sun again. It became as gloomy and dark as on any rainy day, but suddenly a real darkness, that of night, overcame us. The headlight of a slow moving truck below pierced our eyes. Two and a half minutes later, the light was restored, just as quickly as it had come, and before we knew it the rain has resumed, too. Beside this, Heidi and Andy saw and felt the speedy approach of the Moon's shadow, which engulfed the park for a few minutes. All this made the trip worthwhile; besides, we got to visit the birthplace of Johannes Kepler the day before!

It was an awesome experience just to know that modern astronomers can predict the whole eclipse event precisely to the second!

AAAA Member's Guest Observatories

Skywatcher's Inn and Vega-Bray Observatory

Skywatcher's Inn is not simply a bed and breakfast and a place to spend a comfortable night. It is an experience. It is a retreat for the amateur astronomer looking for a comfortable place to stay while enjoying the night sky.

The Inn facilities are adjacent to the Vega-Bray Observatory, a privately owned amateur astronomical observatory that also houses a small science museum and classroom, and a planetarium. Lodging per night offers accommodations for one or two persons. For $89.00, you can stay in one of two unique bedrooms, each with private bath. The Egyptian Room deluxe bedroom and bath with Jacuzzi rents for $110. For $160, you can stay in the Egyptian suite: two rooms with kitchenette. The $75 Astronomer's Studios is the smallest and simplest of the rooms. It includes a smaller bathroom with a shower, and a kitchenette. There is a $10 charge for each additional person per room up to four maximum.

For amateur astronomers, the facilities are ideal. The Inn and Observatory are on top of a small hill overlooking the San Pedro River Valley, just east of Benson, in beautiful southeastern Arizona. The location of the Inn and Observatory offers some of the best dark skies in the USA while still being relatively close to the comforts of civilization.

Eight major telescopes, ranging from 6 to 20 inches in diameter, are the centers of attraction of the observatory. Some are computerized and are able to slew to a galaxy or nebula on a simple keyboard command. You can learn how to use some of our telescopes and guide yourself through the marvels of the sky, or hire an amateur astronomer to help you. The observatory and its many telescopes are an option available to the guests of Skywatcher's Inn.

The Observatory facilities are available during the day for browsing through the science exhibits and for informal teaching at any level in astronomy and related sciences. Solar observing though safe and filtered telescopes can be arranged. At night, amateur astronomers or professors in astronomy can come to the facilities to show you the wonders of the universe as seen through our many telescopes.

Amateur astronomers wishing to use the facilities can bring their own telescopes and cameras or rent the ones of the observatory at modest cost. Use of our equipment is under supervision, depending on the observer's experience.

Skywatcher's Inn and Vega-Bray Observatory
5655 N Via Umbrosa
Tucson, AZ 85750-1357
(520) 615-3886
E-mail: vegasky@azstarnet.com
http://www.communiverse.com/skywatcher/

New Mexico Skies Guest Observatory

New Mexico Skies is a guest observatory for the sophisticated amateur astronomer, located in the Sacramento Mountains of New Mexico, 16 miles from the "nearby" village of Cloudcroft (population 592), and 32 miles from Alamogordo, NM, which has fewer than 40,000 residents and is located on the other side of the mountains.

The "dark" at New Mexico Skies is truly dark! Guests and astronomer neighbors regularly report skies with limiting naked eye magnitudes of 7+.

The "transparency" at NMS is phenomenal. The 7,300-foot altitude puts you well above most atmospheric borne pollution and particulate matter. The Sacramento Mountains are on the "high desert" and skies benefit from the clean, dry air associated with desert environments.

The "seeing" qualities of the skies at NMS are among the best you will find anywhere. The nearby Apache Point Observatory, home of the Sloan Sky Survey, 15 air miles away over the mountains, frequently reports star images smaller than one arc-second.

New Mexico Skies guest accommodations are complete living units with separate bedrooms, private baths, living and dining areas and fully equipped kitchens just waiting for your groceries. All units have private entrances with lights shielded from the observatory area. Accommodation Rates vary according to whether you stay during the new moon or not. The 1 bedroom apartment single occupancy rate is either $120/night or $80/night. The rates for double occupancy are $130 and $90, the 2 bedroom apartment goes for $140 and $100, while the 3 bedroom home is $190 and $150. 6 nights or more of accommodations gets you a 20% discount on everything.

New Mexico Skies currently has six separate permanent observatories plus an assortment of portable telescopes, along with many accessories such as CCD cameras and various guiders. Three of the observatories are housed in individual 12-foot clamshell domes by Astro Haven. The Dome 4 observatory is housed in a 10' rotating Pro-Dome by Technical Innovations. The observatories are equipped with a 14-inch Celestron Fastar, a 16-inch Meade LX200, a 7-inch Meade f/9 APO refractor and a 12-inch Meade SCT LX200. Any of these telescopes, cameras and equipment are available for guests on a rental basis to use during their observing sessions. Of course, you are also welcome to bring your own equipment.

Mike & Lynn Rice, Astronomers
New Mexico Skies, Inc.
P. O. Box 559, Cloudcroft, NM 88317,
(505) 687-2429.
E-mail: nmskies@pvtnetworks.net

White Sands Star Party

I found a new star party to attend, and it was completely by accident.

Last summer, I realized that the Labor Day weekend was also, for once, an observing weekend. So I figured that it would be fun to be able to spend more that one night observing, instead of just driving up to my club's observing site as usual on Saturday night and coming home again on Sunday morning. But I also thought that spending the night camping could be really hot in Texas over Labor day. Especially with no place to wash up during the day.

I was reading the August issue of the REFLECTOR, and saw the ad for New Mexico Skies Guest Observatory. So I called up Lynn Rice, and made a reservation for arrival on Friday, with return to Dallas on Monday. This meant only one day extra off from work, with three nights of observing, and a nice place to stay added in. What a good idea that was!

Then, I was reading the August issue of *Sky & Telescope* Magazine, and saw an announcement for the First Annual White Sands Star Party, sponsored by the Alamogordo Astronomical Society, at exactly the same time I planned to be at New Mexico Skies. So I called, got a registration form, and sent in my forty bucks. I'm glad I did!

The White Sands Star Party is a joint effort among four different organizations: the Alamogordo AS, the National Park Service and White Sands National Monument, the Space and Science Museum in Alamogordo, and the Sacramento Peak Observatories. The event was intended to be a fund raiser for the Project Astro Program sponsored by the Science Center. This first time, over 100 people from around the country, but mostly Texas and New Mexico, attended, and more than $1800 was raised for Project Astro.

WSSP programs included IMAX presentations at the Science Center and tours of the Apache Point and Sloan Digital Survey telescopes, and the Sunspot Solar Observatory on Sacramento Peak.

Observing events were held in the White Sands National Monument, a different and exciting place from which to observe. Meetings and presentations were also held in the Science Center in Alamogordo.

I was able to meet a lot of new people in New Mexico, and talk to officers and members of the Alamogordo Astronomical Society. I also got to renew my acquaintance with Dr. Alan Hale, whom I had met once before in 1994, at the Okie-Tex Star Party.

My congratulations to Jackie Diehl and Brian Armstrong of the AAS, and all their coworkers and volunteers, for hosting a successful first event. I wish them many more successful White Sands Star Parties.

WSSP 2000 is planned for September 1-3, 2000, again over Labor Day weekend. For information, write to: White Sands Star Party C/O Space Center Education Department, P.O. Box 533, Alamogordo, NM 88310. E-mail: jdiehl@zianet.com. http://www.zianet. com/aacwp/wssp.html

Ed Flaspoehler

A u t u m n O b s e r v i n g

Time stands still for no man: nor does it proceed by mankind's clocks

by Brenda Culbertson

stargazr@mail.holton.k12.ks.us

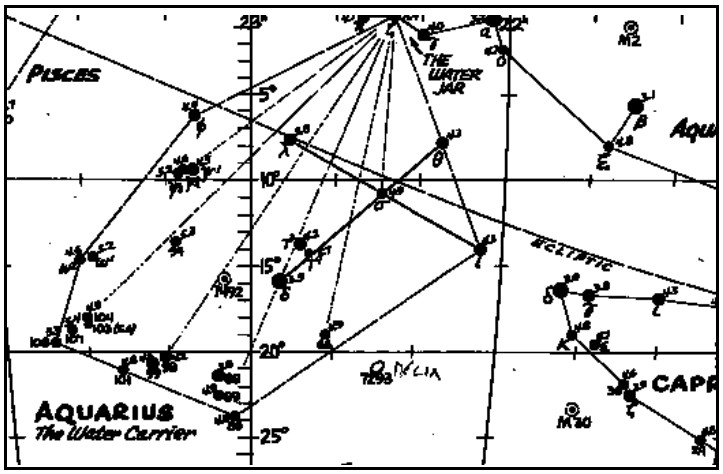
It might not feel like it now, but summer is almost over and the next season is soon to take its place. Schools are in session for the 99/00 year and all the hype of Y2K is soon to be blasted into the past. Yet to come is the REAL millennium in 2001. (Sorry if that last line rhymed, but I am back in English classes.)

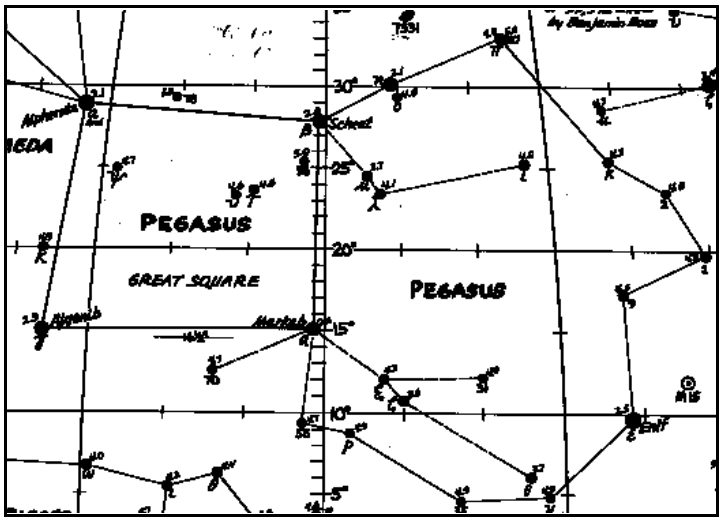
It seems that we humans have to classify and catalogue everything we can, including time. Fortunately, the stars don't follow Man's timekeeping techniques and they will not notice our excitement of another rotation of the orb we live on. The couple thousand years we have recorded isn't even a drop in a bucket to the time it took for the universe to develop. And, there is nothing we can do to stop time from passing.

Maybe if we stopped recording the minutes, hours and days, but began recording events in our lives, we would be much happier. Some of the most spectacular events I have seen have been in the heavens, the place where most people don't even look any more because there isn't time to do that.

Well, here we are watching the sky rotate above us, with all the stars still in order, as always. We look and we see many of the same objects we have seen before, but our interest is renewed. The stars do not pay heed to time, but give us timeless delights to share. We share these celestial objects with previous generations, as well as those who will come after us, and who have not yet seen them. Thus, we leave our mark on the future, as well as the past, and the present.

Here are some of the timeless items of the Autumn season to share with others. Just go out and look up, with or without a telescope. There is something for everyone.





Easy Objects

An object that looks to be half the apparent diameter of the Moon is located in Aquarius. The Helical Nebula (NGC 7293) is said to be the largest and nearest (100 light years away) planetary nebula to us. It is large, but it is faint and has a low surface brightness. Binoculars may be used to observe it as a fuzzy 6.5 magnitude object. Don't forget to take a peek at globular cluster M2 while you are studying Aquarius.

Pegasus is one of the favorite constellations in Autumn. An easy globular cluster seen with binoculars is just about 4 degrees NW of Epsilon Pegasi. The cluster, M15, is about 6.5 magnitude and is about 35,000 light years away. A difficult object is associated with this cluster: K648, a small planetary nebula.

Another easy object to view naked eye, or with binoculars, is M33, the "Pinwheel Galaxy," in Triangulum. It is one of the brightest members of the Local Group, being about 6th magnitude. It is so large and diffuse, however, most people cannot find it. Look 14 degrees SE from M31 and about 7 degrees SE from Beta Andromedae to find the area of this huge spiral galaxy.

Moderately Difficult Objects

While in Aquarius, try your hand at locating the glowing green 8th magnitude Saturn Nebula. It is located about 1 degree west of Nu Aquarii and is best observed through a 10-inch or larger aperture telescope.

Pegasus has a group of objects that elude detection by many observers. Stephan's Quintet is made up of the objects NGC 7317 (15.3 mag.), NGC 7318A (14.8 mag), NGC 7318B (14.9 mag), NGC 7319 (13.7 mag), and NGC 7320. The group is half a degree SSW from NGC 7331. This group can be detected in smaller aperture telescopes, but is better viewed through 8" or larger.

Van Maanen's Star is a white dwarf about 2 degrees south of Delta Piscium. This is one of a few white dwarves that can be seen in smaller telescopes. The difficulty in viewing this star is that it is only about 12th magnitude and about the size of Earth. It is about 14 light years away and is the nearest white dwarf to us.

Difficult Objects

Go to Fornax for one of the dwarf elliptical members of the Local Group. The Fornax System is a spherical grouping of faint stars. It is extremely low in density and surface brightness. The globular members of the Fornax System are around 13th magnitude with individual star members no brighter than 19th magnitude. The overall brightness is observed to be around 9th magnitude and the distance from Earth around 600,000 light years.

Sculptor also has a dwarf elliptical galaxy system, the Sculptor System. It is nearly impossible to detect because of its low star density. The stars are 18th magnitude and fainter but cover a 1-degree area located about 8.5 degree SSE from NGC 253 and 4 degrees south from Alpha Sculptoris. This system is around 270,000 light years away.

If you looked in Pegasus at the easy object, M15, you read the note about a small planetary nebula. K648 is on the northeast side of M15 and is about 1" in diameter with a photographic brightness of about 14th magnitude. It is easily missed.

A u t u m n

The Planets

The gas giants are present again and ready for close scrutiny. Look for the Great Red Spot on Jupiter, as well as the festoons and other atmospheric features. Look for the small divisions in Saturn's ring system as well as its atmospheric bands. Neptune and Uranus are still available and are to be occulted by the Moon during this season.

Mars, Mercury and Venus return to view. Look for Mercury's short transit across the solar disk on November 15. Pluto is still out there, as are the asteroids that accompany us around the Sun.

The Sun

Let's not forget the Sun this season either. Sungazers are seeing great and wondrous things coming from the center of our system. Coronal jets, flares of all types, spots and many other phenomena are featured on the Sun. Of course when the Sun is active, we are on guard for viewing aurorae.

Fall Meteor Showers

The Orionids peak from Oct. 21 through the 23rd. This is just before the Full Moon, though, so don't expect a wonderful sight of this one.

The Taurid Meteor Shower peaks just before New Moon, however, so get ready for it. The peak ranges Nov. 3 - 5 with an expected average of 15 meteors per hour. Lets hope for more.

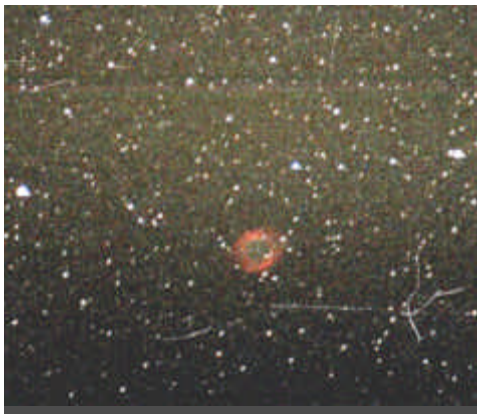
The Leonids range from Nov. 16 through the 18th this year. Do you think we will have as good a show this year as we did last year? The Moon phase will not be ideal, but Full Moon isn't until Nov. 23, so we might get enough dark nights to see a few fireballs.

The Geminids could be good again for us this year. Their peak dates are Dec. 13 - 15, with cold, clear skies available. The peak falls around First Quarter Moon, but with the long nights, we should have some quality meteor-watching time.

Other

New Year's Eve, Dec. 31, 1999! NOT, I repeat, NOT the new millennium! It doesn't start until New Year's Eve, Dec. 31, 2000. So don't celebrate yet! Hold onto your party hats and go with the Real Thing. (As if time really matters!)

PHOTO CREDITS: Helix Nebula by Ed Flaspoehler. M33 from Real Sky CD by Astronomical Society of the Pacific. M15 from Fred L Whipple Observatory, www.seds.org/messier. Stephans Quintet by Tim Hunter, www.3towers.com.



NGC 7293 - Helix Nebula in Aauarius

M33 - Spiral Galaxy in Triangulum

M15 - Globular Cluster in Pegasus

NGC 7320 - Stephan's Quintet in Pegasus

Dates to Remember

October:

8-9	Draconid Meteor Shower peak
9	New Moon
11	Columbus Day
18	Lunar occultation of Neptune
19	Lunar occultation of Uranus
21-23	Orionid Meteor Shower peak
24	Full Moon
31	Daylight Saving Time ends (Fall back 1 hour)

November:

2	Election Day
3-5	Taurid Meteor Shower peak
7	New Moon
14	Lunar occultation of Neptune
15	Lunar occultation of Uranus
15	Mercury inferior conjunction - Transit
16-18	Leonid Meteor Shower peak
23	Full Moon
25	Thanksgiving Day

December:

3	Hanukkah begins at sundown
7	New Moon
11	Lunar occultation of Neptune
12	Lunar occultation of Uranus
12	Lunar occultation of Mars
13-15	Geminid Meteor Shower peak
22	Full Moon
25	Christmas
31	New Year's Eve (NOT THE NEW MILLENNIUM!)

There are several occultations of various sorts and other astronomical events over the next few months. Check your calendar for dates. Also *Sky & Telescope's* News Bulletin and Sky at at Glance will give specific information. You can e-mail me with your geographical coordinates and I'll check into any for you.

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