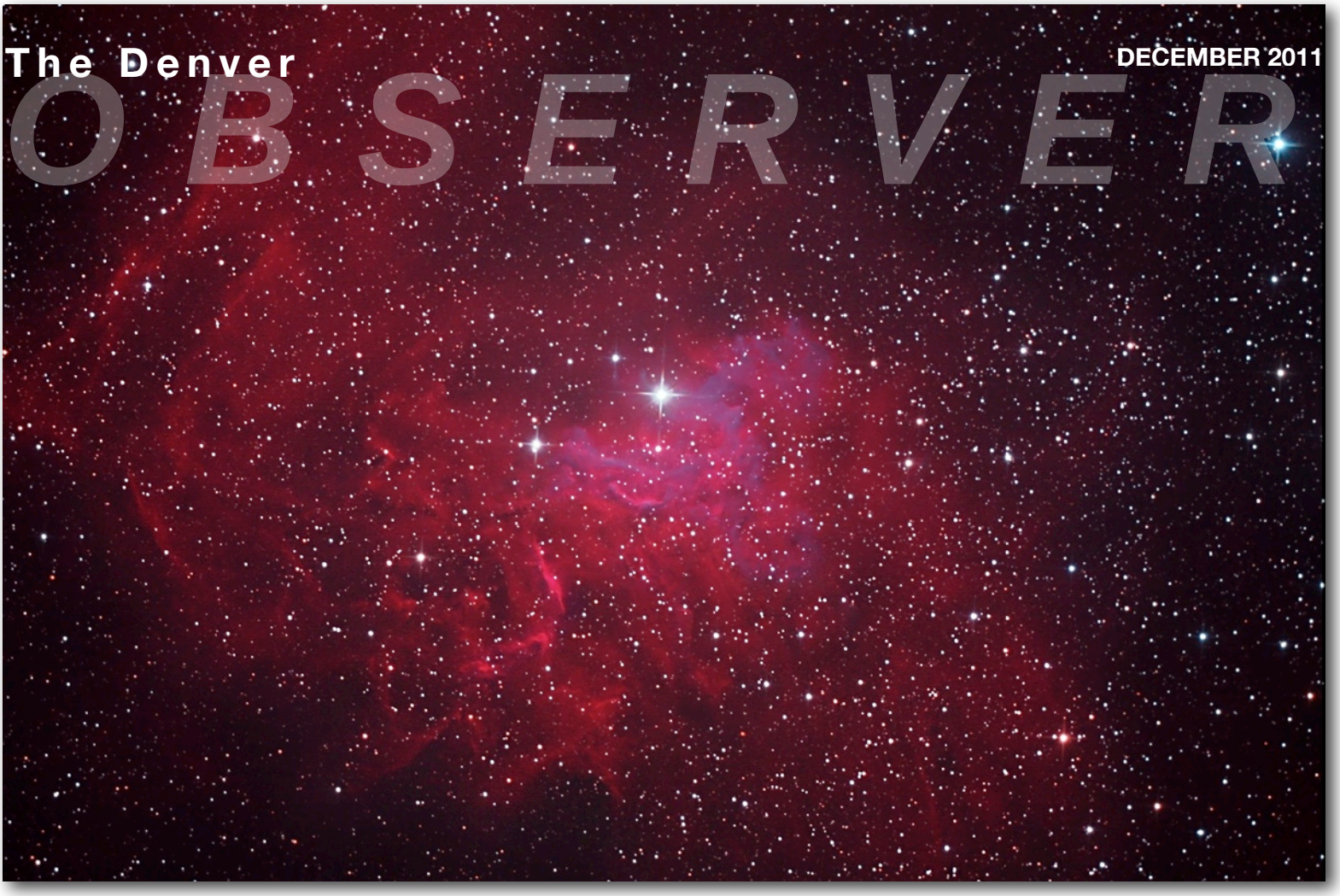
The Denver OBSERVER

DECEMBER 2011



A HOLIDAY DAZZLER

IC405 / CALDWELL 31 - THE FLAMING STAR NEBULA IN AURIGA

Powered by the "runaway" variable O-type dwarf star AE Aurigae and its temporary neighbors, the Flaming Star Nebula is a unique combination of red emission and blue reflection nebulae. Frustrating for visual observers, the Flaming Star only yields its full glory to the camera. Darrell Dodge made this image on the windless night of November 20-21 at the DAS EKG Dark Site with a Honis-modified Canon 450D DSLR through an AT8IN f/4 8-inch Imaging Newtonian. The final image is comprised of twelve 360-second sub-frames, processed with Nebulosity 2.5 and Photoshop CS5.

Image © Darrell Dodge

Calendar

1..... First quarter moon

10 Full moon (Lunar Eclipse at moonset)

17..... Last quarter moon

22..... Winter Solstice

24.....Last quarter moon

31.....New moon

Inside the *Observer*

DECEMBER SKIES

by Dennis Cochran

NGC 253 is a large and bright, near edge-on spiral galaxy. It's directly south in the early evening this month, under the western end of Cetus below his Beta star, almost to α (alpha) Sculptor. On the way down to NGC 253 but much closer to is NGC 247, a large galaxy like NGC 253 but considerably fainter. South of NGC 253 but still not quite to α (alpha) Sculptor is the "relatively uninteresting" (*Peterson's Field Guide to the Stars and Planets*) globular cluster NGC 288, very near the South Galactic Pole. At NGC 253 we're almost as far south as Fomalhaut.

Let's scrape ourselves off of the horizon and throw our heads back over to the popular, recognizable region of Cassiopeia. On the way, right at the zenith, we might want to linger at M31 to look at the heart of that galaxy or maybe all of it if you're under dark skies. Once at Cass we could slide up the northwestern slant of her Alpha-to-Beta line and continue on the same distance to the big cluster M52. Just downright from that is the Bubble Nebula NGC 7635. The huge star cluster NGC 7798 is southwest of β (beta) Cass. We've mentioned these before, but there they are. We're looking at the Milky Way even if we can't see it from our observing station, and we can swim east or west in its starry stream to find other wonders, such as M39 two-thirds of the way west towards Deneb and M29 at the crossing midpoint of the flying swan. We could check out the lovely Albireo at the head of the swan, and then dive south of that to the Dumbbell, M27. The same distance in the north direction from Albireo is M57, another exploded star. One of these eruptions made a simple cheerio shape, the other a more complicated scene

Continued on Page 3

FOOD, FUN AND SEASON'S GREETINGS!

The Denver Astronomical Society invites you to our annual Holiday party on Saturday, December 17th at Hacienda Colorado, 4100 E Mexico St in Denver.

The cost per member is $18 for just dinner, but for $25 you can also have an appetizer, dessert, or one of their famous margaritas. More than one of these options may be had for $7 each via tickets. Wine, beer, and other beverages are available from a cash bar.

To RSVP, please fill out the form below and return to DAS' treasurer before December 7th. It's best to know your choices beforehand, but we'll also have more of those $7 tickets available at the event.

Number of people you're bringing:_____

Number of Dinners: **$18** (dinner only) **$25** (includes appetizer, dessert or margarita)

			Choose 1 for each $25 dinner:	
Chile Rellenos (veg)	_____	_____	Guacamole	_____
Poblano de Pollo(-gluten)	_____	_____	Queso	_____
Chimichanga	_____	_____	Brownie	_____
Spicy Carne Asada Salad	_____	_____	Empanada	_____
Pork Carnitas Burrito	_____	_____	Margarita	_____
Mexican Chopped Salad	_____	_____		

Total: _____x$18 + _____x$25 = $_____

Extra goodies: (more appetizers, desserts or margaritas)

Guacamole	_____
Queso	_____
Brownie	_____
Empanada	_____
Margarita	_____

Total: _____x$7 = $_____

Beer, wine, tequila, other beverages: for sale at event

Grand total: $_____

Please make your check payable to: **DAS Treasurer**
Brad Gilman
7003 S Cherry St
Centennial CO 80122

Payment and forms are also accepted by hand at any DAS event where Brad is present.

DAS SCHEDULE

DECEMBER

3 Open House at Chamberlin Observatory (Begins at 5:30 P.M.)
16 E-Board Meeting at Chamberlin (Begins at 7:30 P.M.)
17 DAS Holiday Party (Begins at 6:00 P.M.). See Page 2.
20 Hanukkah (Begins at sunset this evening).
23-25 EGK Dark Sky weekend
25 Christmas

JANUARY

6 DAS General Membership meeting at D.U.'s Olin Hall (Begins at 7:30 P.M.). Nominations of Officers
13 E-Board Meeting at Chamberlin (Begins at 7:30 P.M.)
20-22 EGK Dark Sky weekend
28 Open House at Chamberlin Observatory (Begins at 5:30 P.M.)

Public nights are held at Chamberlin Observatory every Tuesday and Thursday evenings beginning at the following times:
March 9 - April 14 at 8:00 p.m.
April 15 - September 1 at 8:30 p.m.
September 2 - March 8 at 7:00 p.m.
Costs to non-members are: $3.00 adults, $2.00 children
Please make reservations via our website (www.denverastro.org) or call (303) 871-5172.

Society Directory

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Joe Gafford
Chuck Habenicht
Ron Hranac
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Tim Pimentel
David Shouldice
Dan Wray
Ron Mickle, Past President
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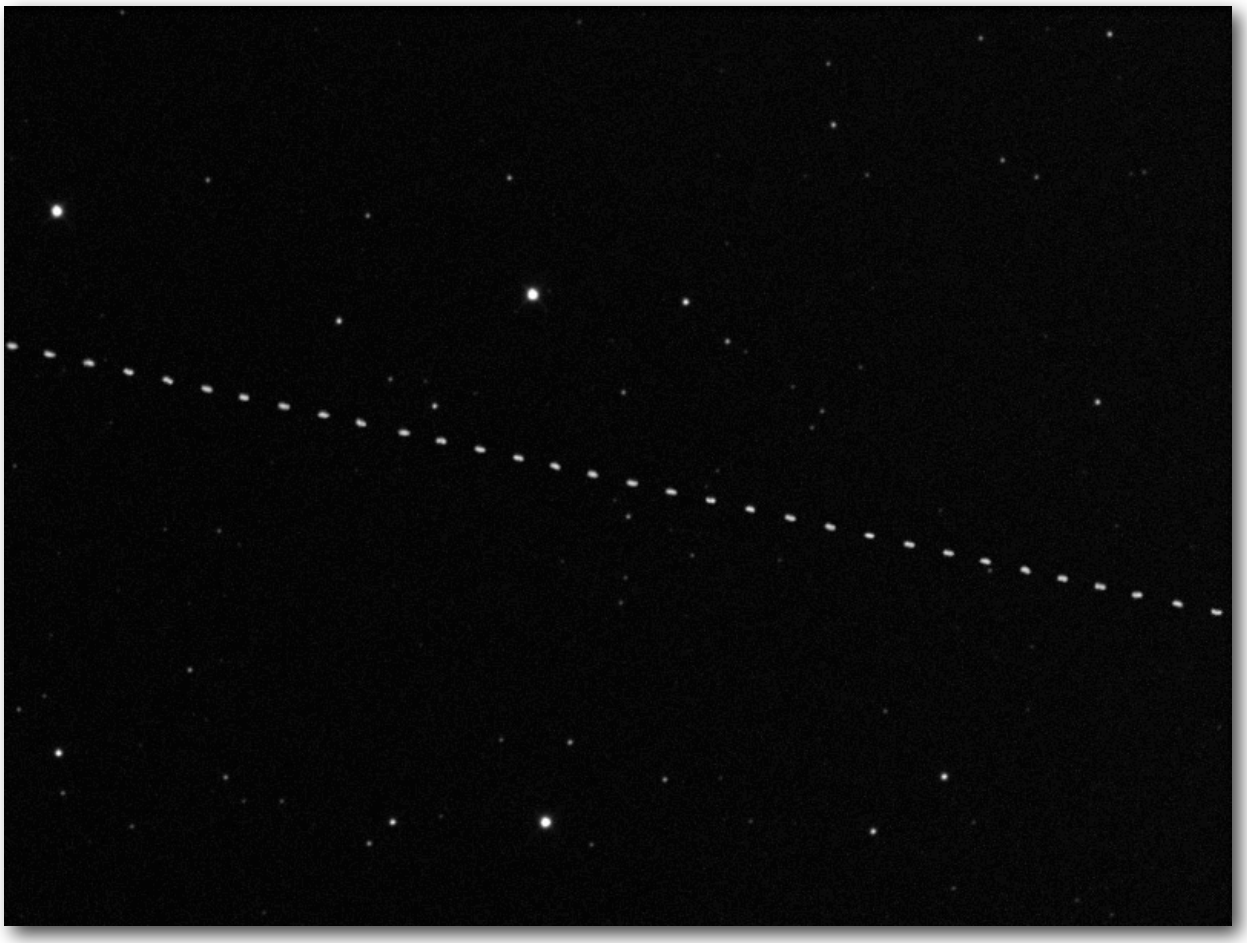
The Executive Board conducts the business of the DAS at 7:30 p.m. at Chamberlin Observatory. Please see the Schedule of Events for meeting dates. All members are welcome.

www.denverastro.org

DECEMBER SKIES *(CONTINUED FROM PAGE 1)*

that changes when imaged at greater exposure times.

Back at Cass we can swim east upstream past the Double Cluster and on to the Gamma star of Perseus—the one above the Alpha star—just east of which is a faint star cluster NGC 1220. Detour south down to Algol and then west to find the gorgeous cluster M34. This is a naked-eye object if you're in the right place and beautiful in binoculars. From Algol, famous as an eclipsing binary in which one sun orbits in front of the other from our viewpoint, we can bounce north to the Alpha star of Perseus and thence east a longish way, but still within Perseus's boundaries, to the large cluster NGC 1528. Our drift takes us farther east to brilliant Capella, and then east through Auriga past the three globular clusters Messiers 38, 36 and 37, in that order, and out the other side to M35 near the foot of the western twin in Gemini. M35 is another possible naked-eye object, better in binoculars than telescopes.



THE CLOSE FLYBY OF ASTEROID 2005 YU55

This composite of 32, one-second images was taken the evening of November 8, 2011 as the asteroid flew through eastern Pegasus. Each image was about 4.8 seconds apart in duration. The field of view is 20'x15' centered at RA: 21h 50m 45s; Dec: +15° 11' 50". Images started at 7:03:42 P.M. MST. Joe shot this with an SBIG ST-2000XM CCD camera on an 18-inch f/4.5 Newtonian telescope at the EGK dark sky site. *Image © Joe Gafford*

Back at Capella, slide southwest down to the Seven Sisters, also known as the Pleiades (M45). The Seven Sisters is a cluster of over 100 stars and is NOT the Little Dipper, which isn't that little. Just southeast of M45 are the Hyades, an older and looser cluster about 140 light-years away, forming the V of Taurus's head. The prominent red star Aldeberan is a foreground star not in the cluster. Nearby cluster NGC 1647 is a wide-spread grouping northeast of Aldeberan a V's distance. The Little Dipper, incidentally, is hanging down from Polaris while his big brother is low on the northeast horizon digging out his winter den.

If you're up before dawn on Saturday, December 10 you might catch the moon in an eclipsed state setting in the west. Be sure to see Jupiter before it sets. Jupiter is as big as his reputation these nights: Taurus the Bull turns out, in the Greek legend, to be Jupiter in disguise while he is chasing Europa, Princess of Phoenicia. Oh—and don't forget the Geminid meteors on the 14th.

ABOUT THE DAS

Membership in the Denver Astronomical Society is open to anyone wishing to join. The DAS provides trained volunteers who host educational and public outreach events at the **University of Denver's Historic Chamberlin Observatory,** which the DAS helped place on the National Register of Historic Places. First light at Chamberlin in 1894 was a public night of viewing, a tradition the DAS has helped maintain since its founding in 1952.

The DAS is a long-time member in good standing of the **Astronomical League** and the **International Dark Sky Association.** The DAS' mission is to provide its members a forum for increasing and sharing their knowledge of astronomy, to promote astronomical education to the public, and to preserve Historic Chamberlin Observatory and its telescope in cooperation with the University of Denver.

The DAS is 501 (c)(3) tax-exampt corporation and has established three tax-deductible funds: the Van Nattan-Hansen Scholarship Fund, the DAS-General Fund and the Edmund G. Kline Dark Site Fund. To contribute, please see the bottom of the membership form for details (found on the DAS website: thedas.org).

More information about the DAS, its activities and the special tax-deductible funds is available on the DAS website at *www.denverastro.org.*

PLANNING AND OBSERVING ASTEROID 2005 YU55

by Michael Hotka

On August 17, 2002, I was using the Little Thompson Observatory's 18-inch telescope to observe my first NEO asteroid, 2002 NY40. I had one set of coordinates for the asteroid. I put them into the telescope and slewed to that part of the sky. There it was. A fantastic view. I left the scope for a couple of minutes to tell the audience downstairs I had found it and when I returned to the telescope, I never found the asteroid again that night.

When I saw the article in the November *Sky & Telescope* about the opportunity to observe another NEO asteroid, I was in.

From my experience with completing the Astronomical League's Earth Orbiting Satellite Observing Club, I learned that faint, fast satellites were easy to find if you found a brighter star they would pass by, find that star and wait for the appointed time of the satellite to pass it. This technique worked well for completing this club, so I applied the same idea to this asteroid observation.

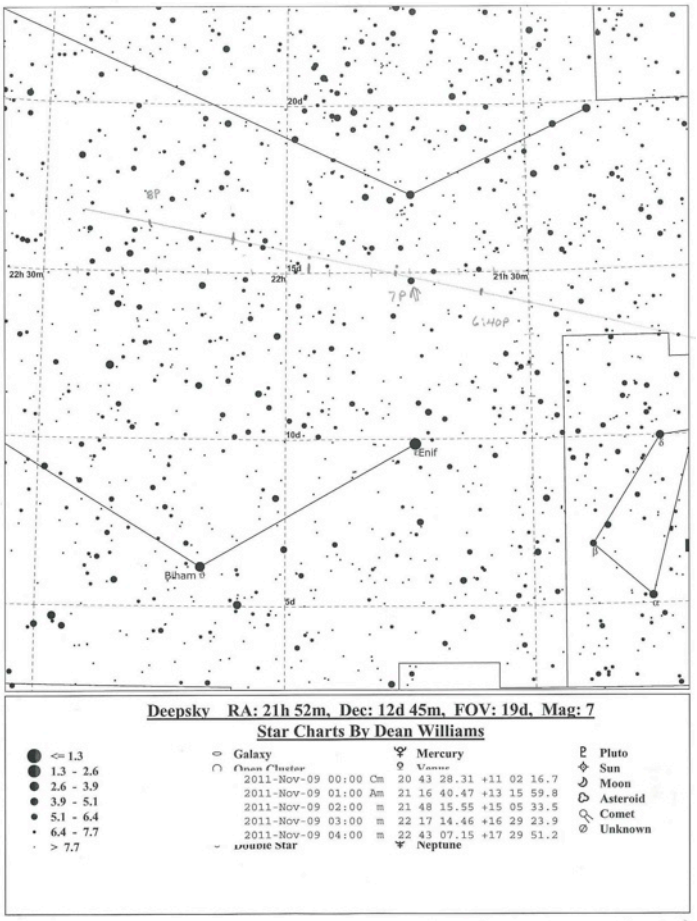
On Monday, November 7, I printed a star chart, and with Joe Gafford's 20 minute incremental Ephemeris of the asteroid, I plotted the course of the asteroid from 7 P.M. to 8 P.M., local time. I noticed that the asteroid would pass between two brighter stars that would be very easy to star hop to. The asteroid would pass between these two stars about 6:50 P.M. Tuesday Nov. 8th. All I had to do was to find this "star gate" and wait.

I had planned on using my 12.5 inch f/8 telescope from my front yard to observe this event. A friend, Dan Laszlo from the Northern Colorado Astronomy Club, asked if the 11th magnitude asteroid would be visible from my well lit, urban skies. Last month, I plotted the 8th magnitude asteroid Vesta from my backyard, along with a near Full Moon, and I barely was able to detect the movement of this asteroid over two nights. The speck of light of Vesta was barely visible.

With my Vesta experience and knowing that 11th magnitude might be difficult to see from my location, I contacted my friend, Gary Garzone from the Longmont Astronomical Society late Tuesday afternoon, asking if I could come up to his home and use one of his light buckets to help see this asteroid. Gary is most known for his 30 inch telescope, but many people do not know he has a 25, 16 and 8 inch Newtonian Dobsonian telescopes.

I arrived just after dark, with a near Full Moon high in the eastern sky, to find that Gary had setup his 25 inch, f/5 telescope for me to use. The star hop from the bright star Enif to my star gate asterism was pretty easy. I was on the star gate by 6:30 P.M. Now all I had to do was wait another 20 minutes.

At 6:50 P.M., I had not found the asteroid in the FOV. Gary used an eyepiece that gave 157 power. I had the FOV favoring the center of the star gate. Not being familiar with using a 25 inch scope, I was looking at the faintest stars in the FOV for movement, not the brighter ones. For a couple of minutes, I had overlooked the "brighter" asteroid already in the FOV. Only when it was bearing down towards a star of equal brightness did my eye detect it's motion and reveal the asteroid. For the next 40 minutes, Gary and I watched the asteroid move amongst the star fields as it moved in an easterly direction, making and dissolving triangular asterisms with the other stars it passed. I did not turn my back on this asteroid, as I did on the first NEO I observed, and was able to follow it across the sky with ease.




Mike and his Dobsonian at the Okie-Tex star party.
Photo by Joe Gafford

I did notice that the easterly movement of the asteroid was almost the same speed as the westerly drift of the FOV due to the Earth's rotation. This made the asteroid almost stationary in the FOV, when in actuality it was really moving. It appeared as if it was not moving very fast, which knowing that it was, displayed a pretty cool effect in the eyepiece.

The other interesting fact I noticed about this asteroid was that it arrived at the star gate earlier than it was predicted to, basically, it was ahead of schedule.

The tips and techniques one learns from completing Astronomical League observing clubs can then be applied to other parts of our observing hobby. Having the ability to star hop, as well as identifying easy star hopping routes to where the asteroid would be at a particular time was crucial in making this observation possible.

JANUARY SPEAKER: MICHAEL CARROLL, ARTIST AND AUTHOR

From the battery-acid-laced oceans of Jupiter's moon Europa to the sand seas of Mars, Michael Carroll surveys Alien Seas. Using NASA photos and his own paintings, Carroll will help us tour the oceans of other planets and moons, from past seas to future ones. Saturn's planet-sized moon Titan is awash with vast lakes of liquid methane or ethane. Titan has other seas—shifting oceans of sand covering vast plains. Mars, too, has sand seas, and Venus may as well.

Do super-chilled concoctions of ammonia, liquid nitrogen and water percolate beneath the surfaces of Enceladus and Triton? What truly alien oceans lie at the heart of the gas giants? Future explorations will find the answers, but for now we can guess at the possibilities of oceans lapping across distant shores. Alien Seas serves up part history, part current research, and part theory as it offers a rich buffet of seas on other worlds. Michael Carroll has been an astronomical artist and science writer for over two decades. He has done work for NASA and the Jet Propulsion Laboratory. His art has appeared in several hundred magazines throughout the world, including *Time, Sky & Telescope, National Geographic, Asimov's, Smithsonian, Astronomy, Ciel et Espace, Analog, Omni, and Odyssey*. Mike is a Fellow and founding member of the International Association for the Astronomical Arts. One of his original paintings flew aboard the space station MIR, and another is on the surface of Mars—in digital form—aboard the Phoenix spacecraft. He is the recipient of the Lucien Rudaux award for lifetime achievement in the astronomical arts.

Mike and his wife, Caroline, have coauthored a dozen children's science books. Mike is currently working on his 23rd book, *Alien Seas* (Springer Publications) for a 2012 release.

He will be signing his books, and he'll also bring some original art for sale!

2012 MEMBERSHIP RENEWAL DRIVE

by Darrell Dodge

It's that time again. . . The renewal date for all DAS members is January 1, 2012. If you are a DAS member, you'll receive your 2012 membership renewal packet in early December. At only $36 ($12 for students) DAS membership is quite possibly the best bargain that you'll get this year!

The renewal notice includes a renewal and donation form and a pre-addressed return envelope to Brad Gilman, your hardworking DAS Treasurer. All you need to do is check a few boxes on a form, write a check or two, drop them in the envelope and mail.

If you joined the DAS before January 1st of 2011 and you paid for one year when you last renewed, your cost to renew for 2012 will be $36.00 (regular members) or $12.00 (for students.) If you're a NEW MEMBER and you joined after January 31, 2011 and you paid the full $36 fee when you joined, your renewal fee will be prorated $3.00 per month to discount the number of months you weren't a member during 2010. This will already be done for you on the renewal form. For example, if you joined October 1st, your renewal fee would be $36 minus $27 ($3 x 9 nonmember months) = $9.00. When you register, you'll have an opportunity to donate to the DAS Dark Site/Brooks Observatory, the DAS Van Nattan-Hanson Scholarship and/or DAS General Fund. And you'll also be able to update your contact information and say whether or not you want to be listed in the DAS Roster for 2012.

If you do want to be listed in the roster, it's important to register on time. The deadline for inclusion in the printed roster is February 28th, 2011. Members who don't renew by the end of March will be removed from the membership rolls. Members may rejoin later in the year, but will not receive prorating for the months prior to the month in which they rejoined. The most important thing you can do for the DAS right now is to fill out that renewal form and send it in with your renewal fee. The DAS would be nothing without you!

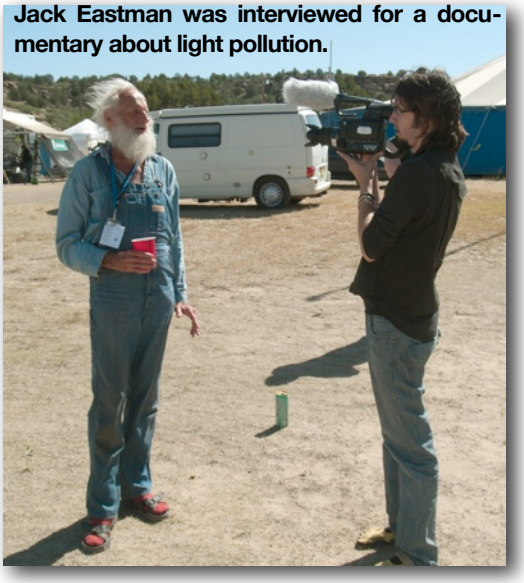
OKIE-TEX WITH JACK

by F. Jack Eastman, photos by Joe Gafford

Yes, it happened again—a trek to the Southeast to Kenton OK again for the 2011 Okie-Tex star party. My first contact with this group was in 2009, and it was, indeed, a thoroughly enjoyable experience and I'm afraid I'm addicted!

This time I decided to try Joe Gafford's route—east across town to I-225 then I-70 East to Limon, CO, then 287 South all the way to Boise City, OK. From there, it's 35 miles back northwest to Camp Billy Joe, just outside of Kenton, OK. The trip was very relaxing, the traffic was light and it took just under six hours. As usual I arrived in time for dinner. I had a great meal, then I made camp. The weather was hot and dry—Very dry. Joe Gafford, who went a day earlier to help set up the camp, said when putting down the chalk lines for the "roads" he only needed to follow the ones from last year. Yes, very dry, indeed. The daytime temperatures were upper 80s, and maybe into the 90s. The nights were comfortable, mostly in the upper 40s for the nighttime lows, usually still in the lower 50s during the first part of the evening and no dew. Thursday night it got down to 34°, and the next day was cool. One of the participants, a meteorologist, who was mentoring a bunch of students from Norman, OK, said that a front was coming through with strong wind out of the north, and then the next day, out of the south. He was right on! The skies were generally clear most of the night with just enough clouds occasionally rolling by to allow guilt-free trips to the "Cosmic Cafe" for coffee and maybe a late night snack. The front did not blow all the clouds out entirely, but it did bring significant cooling for that day (the 34-degree night).

As in prior years, the mood of the star party was very laid back with lots of free time to hobnob with all the really great attendees and, perhaps, get a nap or two after a night of observing.



Jack Eastman was interviewed for a documentary about light pollution.

Sky Quality Meter (SQM) readings were mostly around 21.35 to 21.5, as opposed to the 21.8 that were observed last year, so although the skies were brighter than last year, the Milky Way arching overhead was truly spectacular. We can only hope that many of the students that were in attendance were suitably impressed (and will join the fight against light pollution)! It is really great that a number of high school and college students come for a few nights under truly dark skies.

Old friends that are nearly impossible to see from the city—the Helix nebula in Aquarius, M33, the second (?) nearest spiral galaxy in Triangulum, were easily visible. M31 in Andromeda was spectacular in the little 6-inch comet hunter at 36X with the Explore 20mm 100-degree eyepiece (FOV 2.8 degrees on the sky), and nearly as good in the 6-inch Clark at 31X using its "comet" eyepiece (1.2 degrees on the sky). The seeing was, for the most part, good and it seemed like a bit of sacrilege to use such dark skies for looking at Jupiter and brighter double stars, but the views were worth it. Double stars, Zeta Aquarii were an easy split, nearly equal magnitudes at a separation of 2.2 arc seconds. Then it was a try for Alpha Piscium. Isn't "alpha" the brightest star in a given constellation? Most of the time, "yes." So I aimed the 'scope (a 6-inch refractor, 186x) at what appeared to be the star in question, and couldn't come close to splitting it. I checked the chart, and something seemed fishy; The star was plotted wrong. I even held the chart up to the sky and looked very carefully. Star plotted wrong! Then I looked closer. At the position of the suspect star was a circle on the chart labeled "Mira." Someone had mentioned that Mira, a long period variable with a range about 8 magnitudes, was near a brighter than usual maximum at about magnitude 2.3. The mystery was solved and I found Alpha Psc, much fainter than I expected—it split nicely at a separation of 1.8 seconds. When I was shown the position of Comet Garradd I was able to locate it in the comet hunter (which really ought to be used for comet hunting), right between two trees at about a quarter of degree above the rocks to the west. As last year, just poking through the Milky Way with the wide-field eyepiece on the comet hunter was spectacular, and not too shabby with the 6-inch f/15 refractor and its 75mm (31x) "comet" eyepiece. David DeLassus, one of our newer members, spent time tracking down numerous faint and elusive globular clusters, logging in 56 objects, three of which he said weren't detected. Our own Joe Gafford, in addition to his great imaging was also able to do some real science by obtaining positions of several asteroids. I was amazed by the brilliance of the Zodiacal Light, rising almost vertically before dawn and looking much like a light pollution dome over a large city. The Gegenschein, the antisolar brightening of the Zodiacal Band, was easily visible below the Great Square of Pegasus. It added about 0.07 magnitude to the Sky Quality Meter readings. I was surprised by how large it was, nearly as long as the Great Square itself.

There were about 350 attendees—this number is down a bit from last year but it was still a good turnout. Colorado had a fair share of participants. It was interesting that the Denver Astronomical Society (DAS) outnumbered those from Oklahoma City, the folks who sponsor Okie-Tex! DAS had 20 while OK City had 14. The state of Oklahoma had 60, Texas, 45 and Colorado come in third at 34. Mike Madden from Oklahoma City jokingly said that maybe they should call this star party "Okierado," and noted that Denver is closer to Kenton than Oklahoma City.

Telescopes ranged from several very large Newtonians on Dobsonian mounts (in the 30-inch range), all the way down to my 0.04m Newtonian, which was still the smallest Newtonian at Okie-Tex. Our own John Anderson had his superb "Solar Observatory" with him—telescopes for "white" light (sunspots, faculae and the like) as well as Hydrogen Alpha (prominences, flares and such), and an excellent spectroscope, showing a very detailed solar spectrum. A test of resolution of such an instrument is to see the faint line, due to nickel, between the two strong sodium lines in the yellow at 589.6 and 589.0nm. John's will show this! Perhaps one of the more spectacular instruments was a pair of 6-inch binoculars, built by Tim Havens, also a Denverite. These were not your ordinary "big" binoculars—these were a pair of Takahashi FS-152 APO refractors on a very heavy and precision platform, allowing effortless adjustment of interpupillary distance and maintaining accurate collimation. These were mounted on a Dobsonian-like mount, a superb example of the woodworker's art, and equipped with "Go-To" and accurate tracking capability. The views with the Ethos eyepieces of the Milky Way, nebulae and star clusters were truly spectacular. The only downside was the limitation due to getting large eyepieces close enough together, and some danger of pinching off one's nose!

A young fellow, Dano Black of Lampblack Media LLC, had come to shoot a documentary about light pollution and interviewed many of us, including several International Dark Sky (IDA) members. They told him the effects of light pollution and some of their many experiences in fighting this scourge. I wish him all the luck in the world with his film.

Wednesday afternoon the "formal" talks began, but not without some consternation with the computers. There was a great deal of noise on the audio, which seemed to defy all attempts at a cure. A second machine was pressed into service, but wouldn't "talk" to the projector. Machine #3 seemed unable to deal with PowerPoint, and the download of a fix was taking forever (estimated time to complete 5.8 hours and getting longer by the minute) Our own Mike Hotka rescued us— his machine saved the day! First on the agenda was a great presentation by Bill Faatz: "E. E. Barnard's Life and a Photographic Atlas of Selected Regions of the Milky Way." It was a very interesting in-depth look at Edward Emerson Barnard (1857-1923) and his superb photographic work carried out in the early years of the 20th century. Bill showed some pictures of the 10-inch Bruce astrograph that Barnard used. It had been on a short loan to Mt. Wilson from Yerkes Observatory. The telescope was returned to Yerkes after only a nine-month stay at Mt. Wilson in 1905. I told him that I'd seen, fondled and admired that 'scope in the 1950s when I used to frequent Mt. Wilson. He said that was not possible, as the instrument was returned to Yerkes, long before I was born, where it stayed forever after. Thanks to John Briggs, this mystery was solved. It seems Mt. Wilson built a nearly identical camera that was used on the mountain, and then later was sent to Chile where it was used, among other things, to photograph the discovery of supernova SN1987A. That was the telescope I saw at Mt. Wilson.

After Bill's presentation came Jim Edlin's "Amateur Spectroscopy Equipment," a description of some of the more affordable spectrographs on the market and the work that can be accomplished with these. He mentioned that great diligence must be taken to remove all

Joe Gafford's imaging setup.

motion of the observer, Earth's rotation and revolution about the sun for example, that will be sources of error in the final data. Truly amazing that with a relatively small telescope amateurs today can do work that the pros could only dream about 20 years ago.

This talk was followed by some furry-faced old buzzard from Colorado, yours truly, talking about the Chamberlin Observatory and last year's removal, disassembly and cleaning of the 20-inch Clark objective. The evening talk was Ron Dilulio, "Are we Alone?" a discussion what constitutes "life" and of life elsewhere in the universe. Some of the criteria for defining "life" he mentioned were: 1) All life forms contain deoxyribonucleic acid, (DNA), 2) All life forms have a method by which they extract energy from their surroundings and convert it into energy that sustains them. 3) All life forms can sense changes in their surroundings and respond to those changes, and 4) All life forms reproduce.

Ron returned to open Thursday's program with "Here Comes the Sun." This talk covered the importance of the sun, some of the early mythology about it and a bit of the physics of our nearest and brightest star. Ron was followed by Mike Lockwood with a comprehensive discussion of optical testing methods, Foucault, Ronchi, Interferometry and the like, followed by a look at how he had made improvements to his Newtonian telescope. The evening talk was Bill Moore's "Oklahomans in Space," with interviews of many of the folks from Oklahoma active in the space program. I was surprised to see among them our own Ben Clark, recently retired from Lockheed Martin.

Then came the first of the two door prize drawings, and it seemed that all of us Coloradoans went away with the lion's share of the prizes. Friday's program, again following a great night of observing, opened with our own Mike Hotka discussing the evolution of his 12.5-inch f/8 Newtonian, which went through many incarnations ending up as a Dobsonian-mounted monster. Rod Gallager then gave a talk on Digital Imaging Techniques followed by John Love's "Going Mobile" talk. This was a fun-filled expose' of his travels in search of the perfect observing sites, complete with descriptions of his encounters with less than good weather and repeated windblown losses of his awning, a story in itself. Saturday, after lunch was the Swap Meet, Part II. I couldn't resist and bought a 40mm Koenig eyepiece. Our own Bruce Heath bagged one at the first session, and I sort of kicked

Mike Hotka gave a talk at Okie-Tex on the evolution of his telescope.

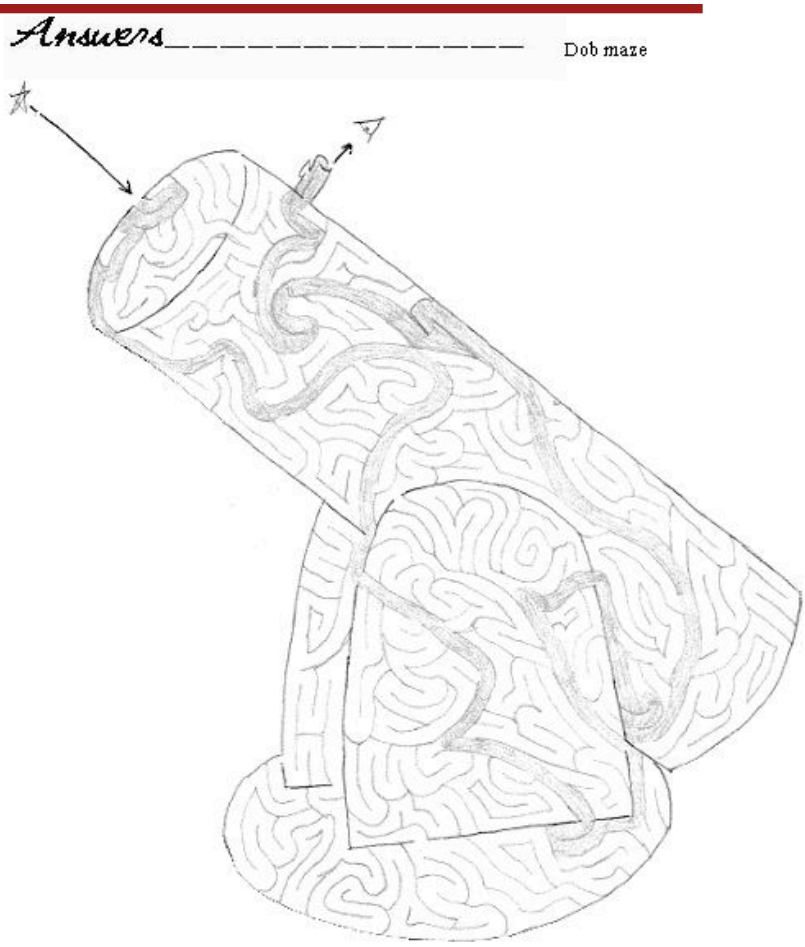
myself for not grabbing it myself (as if I really need another eyepiece)! Well, another one showed up Saturday.

The next round of talks began with Ed Wiley's "Visual Double Star Research for Amateurs," again proving that with the techniques available to amateur astronomers today we can make serious contributions to the science. Ed described some of these techniques for measuring doubles, including speckle interferometry, where the speckled blob of an image can be deconvolved into useful data. Ed mentioned that there is much to be done in the study of doubles, not the least of which is the list of "forgotten doubles" in the Washington Double Star catalog (WDS). The last presentation was a technical discussion of the imaging from the Hubble Telescope. Finally, we had the second door prize drawing— several more of us DAS members were drawn, but had left early. I was lucky enough to bag a Pentax 8.5mm eyepiece, then it was one more beautiful night under the stars.

All too soon, it was over. We had to pack up and be gone by 10 a.m. Sunday. The Cimarron Heritage Center volunteers, the folks who put on the great meals, said their museum in Boise City would be open Sunday for those of us Okie-Texers that would want to see it. I thought I'd spend a half hour or so there, but finally got on the road more than a couple of hours later. There was a great deal of the history of the area— the Santa Fe Trail, many restored tractors, farm implements and vehicles. Also on display were Boise City's original railroad depot (with all the relevant stuff) including the blacksmith shop and a one-room schoolhouse from the era. Remember the band REO Speedwagon? Yep, there was a beautifully restored great old delivery truck, the REO Speedwagon, circa 1919. I learn something new (almost) every day. Finally I was back on the road heading home at last.

It was a truly great gathering, and I'm afraid I'm truly hooked. I'll do this one again!

Here is the answer to the *Observer's* October issue of the Dob maze, presented by Lisa Judd.



Welcome New DAS Members for August-October, 2011:

Evan Anderson
Shawn Ballinger
Josh Been
Vince Conca
Logan Cunningham
Greg Lauer
Steven Lopez
Chris Macleod
Ron Palizzi
Patrick Ray
Scott Schoening
Peter Sniegowski
Karen Tobo
Bob Wildon

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