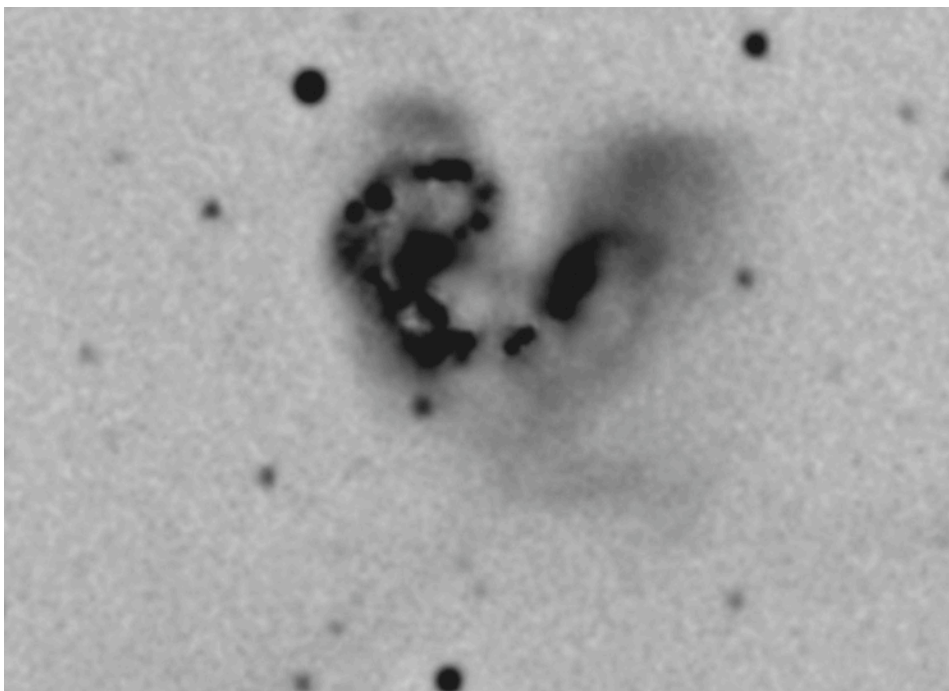


OBSERVER

SPECIALTY SPACE PROBES



CHIP POWER

Digital imagery has revealed the staggering sensitivity of the silicon CCD chip, particularly in applications to astronomy. The “Antennae,” NGCs 4038 and 39 in Corvus the Crow, are targets that challenged film photographers not long ago, keeping their details secret. No more. This beautiful negative image, comprised of just 20 30-second shots, unmasks knots of star formation as these two giant systems merge, and hints at the wisps of stars dragged out in this galactic ballet. Brad Gilman captured this image with an SBIG ST-7e CCD camera on a Celestron C-11 telescope.

Image copyright 2010 Brad Gilman

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JUNE SKIES *by Dennis Cochran*

Here we are in my birth month, ready to take the old scope out under the dark skies of the Wild West! The shimmering disco ball of Sirius has set in the west but the cool red giant Arcturus, magnitude 0.0, is overhead. The bright spark south of that is mag 1.0 Spica in Virgo, a hot blue star. Check out the color difference in your scope. If you stay up later, Vega will appear in the little constellation Lyra. Vega is another mag 1 star, brilliant blue-white. We will talk of the double star, Epsilon Lyrae, in a later column. It’s so near to Cygnus’s Albireo that you’ll be able to do an easy comparison.

Venus, in contrast to the stars mentioned above, shines at magnitude -4 in the west at sunset. It’s as bright as the Killer Planet Mongo will be in 2012 when it comes so close to Earth that its inhabitants will be able

to reach out and grab things as they go by—wait, I wasn’t supposed to tell you that. Never mind. Everything’s OK, sort of. Don’t fly a kite on that day.

Back at beautiful Venus: look at her with binoculars to find her surrounded by the Beehive Cluster, M44, on the 19th/20th. While you’re in the west, observe another color contrast between Regulus in Leo, mag 1.4, blue-white, and nearby Mars. Nearby on the busy ecliptic, Saturn is located conspicuously between the Mars/Regulus pair and Spica. Then in the morning Jupiter and Uranus are 2 degrees apart in the constellation Pisces the Fish. *S&T* says they are “fairly low in the

Continued on Page 3

PRESIDENT'S CORNER

As I write this in mid-May, DAS members and the E-board have completed a very busy month and-a-half working on several issues across major aspects of how we share astronomy with the public and ourselves.

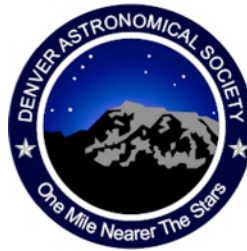
The 20-inch Clark-Saegmuller telescope in Chamberlin Observatory, which has been the "focal-point" of DAS activities for over six decades, was repaired, and was the subject of an in-depth assessment by Antique Telescope Society consultants brought in by Director Dr. Stencel. Overall they gave the scope a pretty good bill of health, with no major issues that would bar the continued use of the 116-year-old instrument for many more years. We're awaiting their detailed report of specifics for on-going maintenance and some recommended changes. The DAS looks forward to playing a role in the use, restoration and maintenance of one of the historic wonders of the Denver area.

The warming hut at the DAS Edmund G. Kline Dark Sky Site (DSS) was damaged late in

the winter by high winds. The building was moved three feet off its foundation blocks, damaging some parts of the structure. We closed the building to use and disconnected the power lines to prevent further damage or possible injury. The DSS Committee, headed by Darrell Dodge, did an assessment of the damage, and with help of engineer Glen Frank, has come up with a plan to repair and move the building back in place. After a brief review, the E-Board approved their plan to proceed. By the time you read this, the building may be back in operation. During this time, Darrell and I met with our dark site landowner, Henry Weisensee, and worked out an issue regarding payment for our power usage at the site. We have a bit less than eight years

left on our lease, so we explored options for the future of the site. It is pretty clear that we likely will not be able to renew our lease in eight years, however, options for purchasing the property with some additional land may be feasible. With this information in hand, the E-Board and DSS Committee can now make better judgments for future use and developments at the site. In the works is a possible domed observatory with a Celestron 14-inch telescope. An observatory has always been in the plans for our dark site and we may finally see this come to fruition in the near future. This would be a great addition to our capability to offer a permanently mounted large scope for member use and outreach activities. The DAS already has a 17-inch high-quality mirror that needs a new telescope structure and home under a dark sky. I certainly appreciate the work of the DSS Committee in getting the warming hut repaired and look forward to new developments and use of our dark site.

This newsletter, the *Observer*, has always been our main means of communicating with you, all our



**DAS PRESIDENT,
RON PEARSON**

Photo courtesy Jack Eastman

Continued on Page 4

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|----------------------------------|-----------------|
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| Joe Gafford | David Shouldice |
| Frank Mancini | Steve Solon |
| Keith Pool | Dan Wray |
| Ron Mickle, Past President | |
| President Emeritus, Larry Brooks | |

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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

JUNE SKIES (CONTINUED FROM PAGE 1)

southeast as the sky starts to grow light" (P.49). Neptune rises earlier in Aquarius/Capricorn. Pluto is highest at midnight, still smarting from being demoted to a Kuiper-Belt object, dim with shame and smoldering resentment at magnitude 14. Its largest moon, Charon, is mad, too.

When you're through looking at Mizar and Alcor, the double star at the bend of the Big Dipper's handle (called the Horse and Rider by American Indians), you might want to wander a bit east to find the face-on spiral galaxy M101. Mizar and the star at the end star of the handle make the base of a triangle, with M101 at its apex northeast of them.

Somewhere immediately below Arcturus is the asterism, Napoleon's Hat, which is kind of the size and shape of the famous Coathanger. I have seen it once, but then failed to find it again at Chamberlin. Good luck! Oh—the Summer Solstice is June 21—dream of Stonehenge.

Number 6 of those bad things that might happen to you whilst observing is the scariest one: an anti-science cult named after Charles Manson finds you in the dark and asks strange, even idiotic questions. It looks like they've got nothing else to do but bother you. This phenomenon is the unhappy extreme of the one you encounter when friends and acquaintances ask about pseudo-scientific non-crises like planetary alignments. They suffer from the modern problem of dependence on the Internet for their knowledge. Knowledge is to be found there, for sure, but outnumbered and surrounded by balderdash. At the cult end of that spectrum are the people who actively don't like experts and would like to discomfit them; one reason not to observe alone.

Meetings: E-Board, Friday, 6/4 at 7:30, RMSS 6/9-12, Open House at Chamberlin Saturday, 6/19 at 8:30, General Meeting at Olin Hall, Friday, 6/25 at 7:30.



THE MOON, VENUS AND THE INTERNATIONAL SPACE STATION

Taken from a public star party. Canon XT1, Sigma lens, ISS photo (below left) 30 sec. exposure f/5.6 ISO 100. Photo above: the moon and Venus playing hide and seek in clouds before the ISS pass. There were lots of oohs and awes from visitors as we watched the ISS and then Atlantis pass by the moon and Venus and then very bright nearly overhead. After three days of snow and rain, Saturday turned into a beautiful evening of planets, galaxies and spaceships!

Images copyright 2010 Ron Pearson



DAS EXTERNAL OUTREACH PROGRAM ENDS

We've had a lot of requests to do astronomy star parties and talks over the past two months I've been president of the DAS. I've been getting several calls a week and Keith Pool, lead coordinator, has passed on a few to me. In mid-May, five or six were pending responses from volunteers on the DAS Yahoo group list, as well as the E-board, to give membership a chance to volunteer. I received very few responses (two.) At a couple recent events we managed to do, some indicated they would do these star parties, but didn't.

The external outreach program in past years was built on a cadre of volunteer members stepping up regularly to do these events, presenting the DAS and astronomy to the public. We did a few events per year. With web advertising, we are now getting several requests a week. Whatever the reason, and there are several, I think, the DAS 'regulars' and membership are not responding as in the past. We cannot continue to promote ourselves as doing these type of events for the public as presented on our website, and not

be able to deliver. We are not a for-profit business, like a caterer doing paid jobs with a paid staff when people request our service. One of my personal biases is never commit to anything I can't deliver on.

Therefore, after consideration and discussion with E-Board members, I've asked webmaster Darrell Dodge to remove all information and promotion of any external outreach events or external star parties from our website. This is a big disappointment, as I think this is one of the most fun parts of DAS activities, and it's been made obvious to me these past two months that the public in the Denver area is hungry for information and our ability to show them the sky and astronomy. This is contrary to the common belief that public interest in science and astronomy is dying in this digital age. The requests come from young kids, students and senior adults. If circumstances change with the general membership and E-board, we can always revisit this decision. Until then, our External Outreach Program is ended.—Ron Pearson.

JUNE SPEAKER IS DAS MEMBER TIM PIMENTEL



Tim has been associated with the DAS since the early 1990s. He is currently on the Executive Board and the Van Nattan–Hansen scholarship committee. He is an engineering test technician and holds a BS in Electronic Engineering Technology from Metropolitan State College of Denver.

Tim will speak on observing the Sun visually, what to look for, and some of the equipment needed for safely looking at our local star.

Photo courtesy of Steve Solon

PRESIDENT'S CORNER (CONTINUED FROM PAGE 2)

members. We are working on changing how we produce and distribute the *Observer*. For those on the Yahoo group, I conducted a basic opinion poll to address a couple of things. One is possible all-electronic distribution. The majority of responses favored an all-electronic "mailing," but a significant percentage also wanted to continue with both postal and e-mailing. It's clear that while we have a large percentage of members who get the e-mailing, there are still significant numbers that need or want a postal mailing. The poll is, of course, biased by those having Internet access on the

Yahoo group. While there are now 162 members on the Yahoo group, many members have Internet emails but are not on the Yahoo group list. Therefore, Darrell Dodge, who manages our membership list and has been carrying a large part of the load in getting the mailing of the *Observer* out, proposed we distribute the e-mailing via a service called "Constant Contact." The E-Board approved this proposal in May. In future membership renewals you will be asked to opt-in for postal mailings, otherwise the *Observer* will be sent as a PDF file to your e-mail address. We hope

this will reduce the need to prepare and mail all but a few *Observers*. In addition, I asked for additional volunteers to help prep and mail and the *Observer*. Two members stepped up and will lighten Darrell's workload and get the *Observer* postal mailings out faster. I encourage as many of you as possible to take the e-mailing as your main means of delivery. If for no other reason, you can see and appreciate the great astrophotos by DAS members in full color, instead of a b&w print on paper.—Ron Pearson.

SPACE DAY WITH THE DENVER MUSEUM OF NATURE & SCIENCE



SPACE DAY EVENT WITH DMNS ON MAY 8, 2010

We had a good day of solar viewing. We estimated we had about 140 people for the event. DAS participants included; Cliff Simpson, Keith Pool, Rod Pinkney, John and Judy Anderson, Tim Pimentel, Norm Rosling, Wayne Kaaz, and Ron Pearson.

Photos courtesy of Ron Pearson

RTMC 2010: THE ANNUAL EASTMAN JAUNT

by Jack Eastman



RTMC LAAS BOOTH

Photo courtesy of Carla Johns

Once again, as the sun heads north and life returns to the trees and bushes, it is time to head west into the sunset for yet another Riverside Telescope Maker's (Manufacturer's?) Conference (RTMC) at Camp Oakes near Big Bear, California. This trip, out I-70 to I-15 and south, has been described in detail many times before, however, this time it was more like the trips out west at Christmas that I used to take when my Aunt was living near Palm Springs; had a bit of everything, rain, snow, sleet, pea soup fog and a bit of Sun. Hit the worst of the blizzard in the mountains west of Salina, Utah, but made it OK. Had some dinner at Mom's in Salina and on to a campsite at Halloran Summit in California. Next morning it was on to the Motel 6 in Big Bear and a good night's rest before going on to Camp Oakes Friday morning. Arriving about noon at the motel, I was going to try for an initial bike ride around Big Bear Lake, thinking the traffic would be minimal, as this was not a holiday weekend. Guess again, and if that wasn't enough, as I was pulling the bike out of the van, it began to rain. Oh well, plan B, head over to La Paws for a great Mexican pig-out.

Friday morning, and on to Camp Oakes. The schedule was sort of undecided; the camp was supposed to be open to us Wednesday, but with no meal service. It turns out the camp snack bar was open Thursday, but I felt it would be a mess to go, set up camp and then have to drive into Big Bear for food, so I elected to go in Friday — no loss, since the weather was cloudy and drizzly anyhow.

After setting up camp (in this case I was going to sleep in the van rather than wrestle with the tent) it was off to renew acquaintances, look over equipment, talk to vendors and just have a good time. If the first meal was any indication, the food was going to be good—and so it was, like last year, quite good. The weather was a bit of everything: drizzle and clouds Thursday, marginally cloudy Friday with plenty of sucker holes and near-perfect Saturday. The coldest nighttime temperatures was 25°F—very easy to deal with.

RTMC is trying out a new format, following the New Moon schedule instead of the traditional Memorial Day weekend shindig, and are on a bit of a learning curve. They're scheduling the camp for the new dates, as well. Next year, I'm told, it'll be held again over Memorial Day along with a near New Moon. One downside this year was the very-obvious light pollution, the sky to the west staying bright all night as a result of the greater Los Angeles area. What appeared to be a very early dawn (10- or so P.M.?!) turned out to be the desert communities of Palm Springs, Indio and the like.

There was the usual array of telescopes, but one that caught my eye was a beautifully restored Alvan Clark 4-inch, circa 1917, brought up by Dan Schechter. We used this scope on its original, and very heavy, Clark #5 mount, with its battery of original eyepieces. The performance was very good. Then Dan mounted the tube assembly on his large Astro Physics GoTo mount and used a collection of Zeiss eyepieces—Perfection. Next year, he said he'd have a set of mounting rings for my 6-inch so we can use it on the Astro Physics mount.

Right next to Dan's camp was a 28-inch Dob, providing stunning views of galaxies. There ain't no substitute for aperture! Also, the seeing was good, much better than the usual for the location, but not quite as good as last year. Nearby, Gerry Logan had an oiled triplet apo refractor (6-inch) on a Springfield equatorial; beautiful quality optics and a very finely-machined, very convenient mount. Gerry made the optics and mechanics. Last year, he had a coma free Schmidt-Cassegrain, which he'd made by moving the corrector forward a fair distance from the secondary position, essentially moving the stop position and eliminating the coma. His ray trace analyses were truly impressive.

A truly monster telescope made its appearance this year, a 1.06-meter corrected Dall-Kirkham, the design manufactured by Planewave Instruments. The Dall-K is a Cassegrain-type design, using a spherical secondary and a not-quite parabolic primary, for ease of manufacture. This configuration has a great amount of coma, severely limiting the field. Planewave has come up with a correcting lens assembly near the focal plane that eliminates the coma, creating a design very well suited for imaging. Yes! a 42-inch clear aperture f/3.3 primary, f/6.1 overall. Both corrector lenses were made of BK7 glass. Although I didn't get a look through this instrument, Gene Cross submitted the following—"Image quality good, as seen in star field. Star images slightly soft, but may have been primary mirror insufficiently cooled (though light-weighted with cast open back substrate by Peter Wangness), or the fair-to-mediocre seeing Friday night. The Sombrero galaxy looked very much like a good photo through a large observatory telescope." By the way, seeing is always a problem for large telescopes. This monster dominated the telescope field.

There were few vendors set up in the field, leaving plenty of room for scopes, as in years past.

Friday was essentially a free day with no formal festivities. Saturday morning brought the traditional swap meet. I exercised great restraint—mainly, there wasn't anything I really wanted. I did get another copy of George Abell's *Exploring the Universe* to replace the one I have which has totally fallen apart, and a copy of Sky and Tel's *Pocket Star Atlas*. Saturday was the only day of formal talks. There were the usual vendor's booths, professional instruments, lots of used stuff and

several mineral, meteorite and jewelry folks, as well. One piece that caught my eye was a very large thin section of a pallasite, a special stony-iron meteorite. This one was over a foot across and had olivine inclusions as big as a quarter. The vendor said it would go for between 25 and 30 thousand. Pallasites are very rare and the owner told me that one this size with such large inclusions was really special. Dave Jurasevich gave an insider's report of the great 'Station Fire' that almost claimed Mt. Wilson. Dave was right in the middle of it, having been evacuated from the observatory, returning only to be evacuated again. He had numerous pictures of the action, and gave great kudos to the Montana Hotshots, the firefighters who saved the observatory. The story from Tony Heinsman regarding Stony Ridge Observatory was that they had a close call. A wall of one of their out-buildings was scorched, but the dome and the Carroll 30-inch survived. Michael Fene gave a short report on the Galileo Mission to Jupiter, mainly telling of the mission profile, the failed high gain antenna, but little of the science. A highlight for me was to shake hands, again, with Tom Johnson, my first ever boss and founder of Celestron, who essentially gave me my start in the field of optics.

After dinner (and I might add the food was quite good) were the awards, door prize drawings and the evening keynote talk. The prestigious G. Bruce Blair Medal, awarded annually by the Western Amateur Astronomers to an individual who has made truly outstanding contributions to amateur astronomy, was awarded this year to Robert K. Buchheim. Robert (Bob) is a well-known SoCal amateur astronomer, citizen scientist, author and long-time member of Orange County Astronomers.

The door prize drawing was especially interesting to me. The usual drill is to draw tickets until all the "smaller" prizes are gone, then put all the drawn tickets back into the drum for the grand prize drawing. There were three grand prizes this time, an 8-inch Schmidt-Cassegrain from Meade, a similar scope from Celestron, and from Explore Scientific, a 6-inch Maksutov-Newtonian comet seeker, endorsed by none other than David Levy. Scott Roberts called the first two numbers (they were mine—probably they were also those of a hundred others) then drew out the next number (suspense!) it was also mine. Scott said that this seemed a small prize, and asked if we would want it "supersized?" Of course the audience said a resounding "yes," so he threw in a 20mm, 100-degree eyepiece. Then he read the last number. Short story—I had it at the May 22nd Open House! A really nice little scope with quite good optics, and well suited to public outreach use. It'll get used.

After the drawing was the final lecture. G. Fritz Benedict, of the McDonald Observatory, talked about all the terrific discoveries and science we have gotten back from the Hubble Space Telescope.

This year, the festivities ended in the early afternoon on Sunday instead of the usual Monday morning. There was a workshop on astro-imaging after lunch, but the party was essentially over, so we headed out. It was mid-afternoon and I was tired from late observing sessions, so I went back to Big Bear, dinner again at La Paws and a night at Motel 6. Monday, it was northeast to home. All in all, a great time was had by everyone, and as I have said many times before, will do it again next year.



RTMC PRESENTATION

One of the presenters at RTMC: Tony Flanders of *Sky & Telescope*. Photo courtesy of Carla Johns

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-exempt 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.

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DAS SCHEDULE

JUNE

- 4 E-Board meeting at Chamberlin Observatory (Begins at 7:30 P.M.)
- 9-13 Rocky Mountain Star Star (RMSS)
- 11-13 EGK Dark Sky weekend
- 19 Open House at Chamberlin Observatory (Begins at 7:00 P.M.)
- 25 General Meeting at D.U.'s Olin Hall (Begins at 7:30 P.M.)

JULY

- 9-11 EGK Dark Sky weekend
- 17 Annual DAS Picnic and Open House at Chamberlin Observatory (Picnic begins at 2:00 P.M. and Open House begins at 8:00 P.M.)
- 18 "New Astronomer's Den" on the south lawn at Chamberlin—begins at 7:30 P.M.
- 23 General Meeting at D.U.'s Olin Hall (Begins at 7:30 P.M.)
- 30 E-Board meeting at Chamberlin

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.



The Denver Astronomical Society
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