The Objective View

November 2006

Newsletter of the Northern Colorado Astronomical Society

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Next Meeting: Nov 2 7:30 PM
Ken Van Lew's "Transits"
Shown by Dan Laszlo
Discovery Science Center, Ft Collins

Meeting directions Discovery Science Center
703 East Prospect Rd, Fort Collins
http://www.dcsm.org/index.html

In Fort Collins, from the intersection of College Ave and Prospect Rd, head East about 1/2 mile. See the Discovery Center sign to the South. Enter the West Wing at the NE corner. From I-25, take Exit 268, West to Lemay Ave, continue West 1/2 mile, see Discovery Center on the left.

NCAS Programs
December 7 TBA

NCAS Public Starwatch
November 24 6 pm Observatory Village

Other Events

Little Thompson Observatory Star Night
Nov 17 7:00 pm
http://www.starkids.org

CSU Madison Macdonald Observatory Public Nights
On East Drive, north of Pitkin Street
Tuesdays 8 pm if clear, when class is in session

Cheyenne Astronomical Society, Cheyenne Botanical Garden
November 17 7 pm
http://home.bresnan.net/~curranm/wuts.html

Chamberlin Observatory Open House, dusk to 10 pm
Dec 2, Dec 30, Jan 27, Feb 24, Mar 24, Ap 21, May 26
303 871 5172 http://www.du.edu/~rstencel/Chamberlin/

Longmont Astronomical Society
November 16 7 pm FRCC, 2121 Miller Rd
http://longmontastro.org/

October 5 Program
Radio Astronomy at Colorado's Table Mountain
By Dr. Joseph DiVerdi

It's a two-story climb for focal point access.

Dr. Joe DiVerdi has found an absorbing local diversion from his work as a consultant in magnetic resonance imaging work. The foothills of the Rocky Mountains are home to twin 18 meter dish antennas. The Table Mountain site was leased then purchased by the National Telecommunications and Information Administration, in the Department of Commerce. It is a radio quiet zone. The site formerly had a Mills Cross, a venerable interferometer. The dishes were installed in the 1960s. The dishes fell into disuse in the 1980s, and in 1991 the Deep Space Exploration Society was formed as a 501 (c) (3) non-profit corporation, to operate the site for research and education, see www.dses.org . They are all volunteers attracted to the potential of the vintage hardware. The dishes have a mesh layer with over 50% coverage. They are stored aimed at the zenith, which collects snow in winter, 24 inches in one storm. The site has minimal horizon obstruction. They can be barraged by microwave ovens in Longmont. Wind is a serious issue, but the dishes have withstood 100 mph winds. The control systems are of the era of Polaris and Nike-Hercules missiles. They have backup Selsyn direction indicators. The dish can operate around the clock and point

within 30 degrees of the Sun for targets. Rain does not affect some wavelengths. The signals they chase are extremely weak. All of the RF energy transmitted in universe to date totals less than the energy of a single burned match head.

Rodney Howe chases signals.

Joe showed NCAS member Rodney Howe with their HP Synthesized Signal Generator and a Spectracyber receiver. Software defined radio has great potential. A CU student project was a direction controller. The dish is pointed with 2 to 3 horsepower motors and an 18,000 to 1 transmission. The 8 foot long, 4 inch diameter jackscrew needs monthly attention to keep it lubed. New boots would help, but the $300 x 4 is not in the budget yet. The single dish can perform radiometry of point sources, and can build images of extended sources by raster imagery. They can plot as a function of time for pulsars, or binary systems. Polarimetry measures linear, elliptical, or circular polarization. Spectroscopy consists of frequency dispersive measurements, narrowband or wideband measurements. With addition of the second dish in March 2006, they plan doubled access, double their work (and fun), and will measure 2 independent parameters at once. They could emulate a larger dish and increase the signal to noise ratio, or perform interferometry to increase spatial resolution. Joe illustrated radio astronomy by analogy to optical approaches. He then showed a map of the Milky Way's intensity at 1420.4 +/- 0.4 Mhz. It reflected the Doppler shift due to the Sun's orbital motion. He showed an example of raw spectral data. A drift down over 4 months is likely due to temperature sensitivity in the downconverter. The Edge of Space Sciences balloon launches sometimes have a transmitter, so DSES can downlink video for them. The nominal wavelength for study is 21 cm. The dish is 90 x the wavelength in diameter, so diffraction is a huge factor. The dish is therefore not used for focal plane images. A tunable feedhorn is desirable to optimize the signal. Maps are constructed by raster scan imaging. Raster patterns are designed to give efficient coverage and reduce error. The Sun is a convenient reference for calibration. A number of wavelengths may be used. With the second dish, they will be able to resolve smaller objects. Signal from the paired antennas is Fourier transformed, plotted in a domain. This tells you what the point spread function is, and, if you're lucky, you get an Airy Disk. The Earth's rotation changes the orientation of the baseline. The VLA has been used to generate a beautiful point spread function. DSES made a run at the Deep Impact collision. They looked for hydroxyl radical, but there was not enough energy to get it to perform as a maser. The telescope can record from 400 to 5,000 Mhz. Slew is 40 degrees per minute, enough to track EOSS balloons easily. Joe invites NCAS members to visit, just don't park too near snowcovered dishes!

NCAS Business, October 5 2006

Club President Greg Halac called the meeting to order. He invited members to begin thinking about new officers for December's nominations. Next starwatch for Discovery Science Center is Oct 27. Speaker for Nov 2 still being recruited. Mercury transit is November 8 starting shortly after noon. Club members are invited to Kruse Elementary. Treasurer Dave Chamness notes $490 in our club account. Several members have tried the Unihedron Sky Quality Meter. The Orionid Meteor Shower is peaking the weekend of Oct 20.

23rd Annual Okie-Tex Star Party, 9/16/06 to 9/24/06,
Camp Billy Joe, Kenton, Oklahoma

OKIE-TEX 2006 STAR PARTY WEATHER / OBSERVING OVERVIEW:

Observing Hours and Conditions:

Saturday 9/16/06: 8:30 PM to 5:30 AM (was clear from dusk through dawn). Fair seeing

Sunday 9/17/06: 8:30 to 10:00 PM (then clouds) - it cleared by 3:00 AM by report, but I slept through this. Poor to fair seeing.

Monday 9/18/06: 8:30-5:30 AM (was clear from dusk through dawn). Good seeing (Pickering 7)

Tuesday 9/19/06: 8:30-5:30 AM (was clear from dusk through dawn). Poor to fair seeing.

Wednesday 9/20/06: 8:30-10:00 PM (then clouds) - cleared by 4:00 AM when I woke-up, but I did not observe. Horrible winds by 8:00 AM Thursday morning which lasted until late afternoon (we called it "Hurricane Howard")

Thursday 9/21/06: 8:30-9:15 PM (then clouds)- was clear again when I woke up at 3:45 AM Friday, so I observed until 5:30 AM (dawn). Average seeing.

Overall, we had late evening clouds on 3 out of 6 nights with clearing by the wee morning hours on all 3 of these "cloudy evening" nights. Three nights were clear the entire night. Atmospheric seeing was fair to poor on all nights except one (Monday 9/18/06 which had very good seeing). A huge nation-wide weather system blew through Oklahoma on Wednesday evening, which along with the severe and destructive 70 mph wind gusts, brought cool weather, rain, and clouds for most of the rest of the week. This was the same weather system which caused tornadoes with severe damage and deaths in Missouri, and severe flooding on the East Coast later that week. Many Okie-Tex participants stated that this was the worst wind and seeing at Okie-Tex that they ever recalled. I left for home on Friday 9/22/06 as the weather outlook for the weekend was fairly poor. I would rate this star party as excellent for potential, but only "average" for weather and seeing during this past week. On the clear nights the transparency and darkness were excellent however, and I managed to observe and record 46 Herschel objects in the Herschel 400 list during this star party using my 5.5" APO refractor. This site is rated Bortle Class 1 for darkness on the Clear-Sky-Clock (the same as FoxPark, WY) and I would rate it as Bortle Class 1-2 based on my own personal observations during this past week. It is at least as dark as FoxPark, Wyoming, and significantly darker than the skies at RMSS in Pike National Forest in Colorado.

OKIE-TEX STAR PARTY 2006, DAY BY DAY:

Saturday, 9/16/06

The drive to Okie-Tex was warm, sunny, breezy, and uneventful. A long and fairly boring drive from Estes Park down to Trinidad, Colorado on I-25 with a brief diversion in Pueblo for lunch. In Trinidad I filled the gas tank, which turned out to be critical, because I never saw another gas station until reaching Okie-Tex. From Trinidad Colorado to Kenton Oklahoma was about 125 miles of driving. The first 100 miles I was driving East on Highway 160, a narrow 2-lane highway with almost no cars or houses to speak of. There were only a few isolated ranches along the way. The last 25 miles I headed South toward Oklahoma on Baca County Road 8, which is a somewhat rough dirt road that wound between various ranches and along property boundaries. Crossing cattle grates and passing open-pasture cattle along the way, with "no service" on my cell phone, I got the feeling of just how remote this observing site truly is.

Nearing the Oklahoma border, I passed through some pretty Pinyon-Juniper mesa country with cattle on the roadside (and a coyote crossing the road in front of me). After getting a little lost on the county road intersections (the signs were not clear), I simply followed the clearest and widest dirt road that headed South. At least I knew that I was heading in the direction of Oklahoma!

After crossing the Colorado-Oklahoma border, the road suddenly became a paved 2-lane road that wound through some rather pretty green pastures, ranches, and rocky mesas. This is the area known as "Black Mesa" along the Oklahoma, New Mexico, and Colorado 3-corners region. When I passed the Black Mesa trailhead and the Black Mesa B&B, I knew that I was on the right road to Okie-Tex. I crossed the highway leading to Kenton, Oklahoma (which was less than a mile to the West) and could already see the tents and RVs on the observing field at Camp Billy Joe from this intersection. I had arrived at Okie-Tex after an approximately 360 mile journey in less than 8 hours! Others from Colorado had taken a longer drive further to the East on Highway 286 which avoids the dirt roads, though it adds about 45 minutes and some miles to the trip.

The observing site looked great and is nestled within a shallow and bowl-shaped small valley surrounded on all sides (except to the North) by rocky mesas with pretty layered sedimentary rock outcroppings on the cliffs. The observing field looks like a mowed lawn - quite green with little dust or dirt. Perfect! On arrival I was surprised to find that they had dinner ready for us (for a $7 fee). No one had expected this, since the first scheduled meal was to be lunch the following day (Sunday). I found a bunkhouse with an open bunk (actually many were available) and set up my sleeping bag. After this, I wandered the observing field, and began to setup my camp and scope near the center of the observing field. My TEC 140 APO refractor was ready for a night of observing!

This first night was beautifully clear, dark, and warm, but with fairly poor seeing. I observed from twilight until about 10 PM (mostly showpiece objects and some new southern objects in Corona Australis) when suddenly a strong gusty wind blew-in from the North. Though observing was still possible, the temperature began to plummet, and I went from short-sleeves to my full winter clothing in about 30 minutes time. A significant weather front (which had not been expected until the wee morning hours) had arrived early! I observed a little while longer, but by about 11:30 PM, the lack of sleep and weariness from the long road trip set in, and I went to bed in the bunkhouse.

Sunday, 9/17/06

I woke-up at about 9:30 AM and started talking to one of my roomates in the bunkhouse, Jim Bandy from Texas, who does astrophotograpy with a TV 101 on a G-11 mount. He has been to over a dozen Okie-Tex star parties and got me the scoop on this event. After lunch, I checked-out the full bathhouse facilites at Okie-Tex (they have several shower stalls) and I took a much-needed hot shower. What a nice change from the Colorado Star Parties where all you have is a pit toilet and no running water!

After getting my campsite completely set up with my tent and tarped-in canopy (for blocking the light for sleeping during the day), I wandered the observing field and met a few more folks.

My neighbor, Kim Phillips is a member of the Oklahoma City Astro. Society, who are the organizers of the event. He has a new Meade 10" SCT and is just getting into imaging using a Meade DSI. Setup nearby were Phil and several other astrophographers, who had some very impressive scopes. There were C-14s on Paramounts and large AP refractors on AP 1200 mounts, a couple of RC scopes on Paramounts and large trailers with desks and computers installed inside for doing imaging and processing. Steve Sauerwein who has a 14" TeleKit dob was set up right next to me, and he spent the week working on the Herschel 400 part 2 list. Across the way were Jeff and Bernie from Austin Texas, who have Mewlon 250s and 300s respectively. Bernie also brought along his Obsession 18" dob, which was driven by a ServoCat goto system. Jeff's Mewlon 300 is on an AP 1200 with a beautiful particle wave pier. It is surrounded by blue cloth light shields on PVC frames staked down as wind shields. Near my campsite I also met Fred Lusen from Texas, who has a TEC 140 APO refractor (#160) on a Mountain Instruments 250 mount. He does astrophotography using film with this setup.

Dinner consisted of chicken and beef fajitas and there was plenty to eat. The food at Okie-Tex was quite good and very convenient. It's really nice being at a star party and not having to worry about cooking and cleanup! As evening approached, I set up and uncovered my scope, and got ready for some serious observing! I observed a bunch of globular clusters (mostly in Saggitarius and in the lower Southern skies) and compared and recorded their structures. The skies were incredibly dark with great transparency, but with fairly poor seeing. Unfortunately, by about 10:00 PM clouds rolled in from the North and covered most of the sky. I hit the Cosmic Cafe (open from 10 PM till 3 AM) for a burger and hot chocolate, then some guys in the cafe checked out the internet weather on the local Clear Sky Clock, which predicted several hours of cloud cover. I tore down my APO scope and decided to sleep in the tent tonight. I woke up at about 2:30 AM and could see some stars fairly clearly through the tent window. I wasn't sure if I was seeing sucker holes or clear skies through my tent window, but was tired enough that I decided to keep sleeping. The next day I found out from some fellow astronomers that the skies had cleared completely by about about 3 AM, along with improved seeing, and they ended up observing until dawn.

Monday, 9/18/06

I woke up at 8:00 AM and hung out with the Texas astrophotography group (Jim Bandy, Fred Lusen, Kent Kirkly, etc.) We decided to check out stories of some possible petroglyphs on the nearby canyon walls, so three of us went on a hike through the local canyons. We hiked for about 3 miles total along the lower parts of the nearby cliffs, then on top of the mesas, and finally through a small saddle valley filled with spectacular and oddly-shaped sedimentary hoodoos. Great hiking with some very interesting rock formations and wildlife all around the Okie-Tex observing site. We never found the reputed petroglyphs, but I got some great pictures of the camp and observing field from the top of the mesa to our West. We found out a couple of days later that we had missed the area of the petroglyphs by about 100 yards.

That evening we had a great night of observing! The night was cool but very calm (in about the high 40s for the most part) with very transparent class 8-9 skies, Mag 6.3 naked-eye stars, and good seeing (Pickering 7). I observed and recorded careful notes on about 25 of the Herschel 400 objects (mostly in the summer Milky Way) with the 140 APO refractor, until about 4:00 AM. Okie-Tex is at latitude +36 degrees North, so Saggitarius, Capricornus, and other southern constellations are significantly higher in the sky than in Colorado. I easily observed several deep-southern objects tonight including NGC 253, 55, and 288 in Sculptor, which were spectacular and quite high in the southern sky. These Sculptor gems have always been "in the muck" when observing in Colorado. By 4 AM I was super-tired, and went to sleep in the bunkhouse.

Tuesday, 9/19/06

I enjoyed the day hanging out with some new astronomy friends and talking astronomy and scopes. Tonight the skies were less transparent initially (about class 7) and the seeing was poor (about Pickering 3-4). A stiff breeze blew through the observing field for about 3 hours starting at about 9:00 PM, but then became very calm about midnight. The night was warm (about 60 degrees) and never cooled much till dawn. I observed over 20 more of the H 400 objects with careful recording of observing notes. By the wee morning hours the skies became more transparent (class 8 with mag. 6.3 stars naked-eye) and the seeing improved slightly. Using my 140mm APO refractor, I was able to observe the California nebula easily using my Panoptic 41 with a UHC filter (including seeing the dark lane in the middle) and the Horsehead nebula in Orion was fairly easy to see using averted vision with my 14 mm Radian without a filter, and my 41 mm Panoptic while using the UHC filter. M 33 and M 31 were spectacular with 2 dust lanes seen in M 31 and the spiral structure quite apparent in M 33 using the 41 mm Panoptic. The Pleiades were spectacular with the 41 mm Panoptic, with bright nebulosity apparent throughout the cluster (it looked like a photograph). The Merope nebula was seen in its entire extent, and its misty striated structure was apparent at higher magnifications. By 4:00 AM a bright yellow glow was apparent in the East, and I thought that the waning crescent moon was going to rise. The glow got brighter after which I realized that I was actually seeing the zodiacal light, which was significantly decreasing the sky darkness in the Eastern half of the sky! The whole zodiacal band could be seen stretching from Gemini in the East to Pisces in the West. By 5:30 AM the Eastern dawn was becoming apparent and I covered my scope and hit the sack for the night.

Wednesday, 9/20/06

I woke up at about 10:45 AM and had lunch shortly thereafter. The day was clear and warm and later in the afternoon, I took a well-deserved nap in my tent. The night was clear with a light breeze when I started observing more H 400 objects at about 8:00 PM, but the skies rapidly clouded-over until it was totally socked-in by about 10:00 PM. I put my scope in its case, covered my mount and pier with my AstroSystems white cover, and listened to "Slacker Astronomy" podcasts on my MP3 player until about midnight while sitting in my chair and looking up at the Milky Way and the stars through "sucker-holes". The forecast was for clouds with a 20% chance of rain, and stronger winds (up to 30 mph gusts) by morning. I fell asleep in the tent after putting in my earplugs since there were still some voices on the observing field around me.

Thursday, 9/21/06 (Hurricane Howard)

I woke-up at 4:00 AM having to use the bathroom. There was a mild breeze blowing through the camp with very clear and transparent skies. Orion and Sirius dominated the Southeastern skies with the bright Winter Milky Way band stretching across the sky from Cassiopeia in the Northwest to Puppis in the East. The zodiacal light band was bright and plainly visible stretching across Gemini and the other constellations of the ecliptic from East to West. Little did I know that this pristine scene would soon change.

It was too close to dawn to setup my scope again, so I fell asleep in my tent after my early morning sojourn, but then woke up at about 8:00 AM to the violent physical shaking of my tent (I still had my earplugs in). This was quite worrisome since the tent was completely encased in my tarped-in canopy to keep out the light! I pulled-out my earplugs to hear the sound of machine-gun-like raindrops pelting my canopy and tarps. The wind was gusting strongly, and rapidly got worse. I quickly got out of my tent and while I was trying to secure my tarped-in tent canopy, the North side tarp ripped completely loose with the grommets torn out of the tarp! Before I could completely secure this half, the canopy began to lean precariously and the steel supports were bending under the tremendous wind gusts. This despite the canopy being secured on all 4 sides with 1/4" nylon rope tied to 12" steel stakes! I tried adding a couple more stakes with nylon guy lines to the tarp-covered canopy, but before I could do this, the canopy roof came loose and started tearing at the velcro tie seams. I quickly removed the canopy top and threw it in the car. This was followed by my quickly trying to remove the side tarps before they tore the steel canopy frame to shreds! Fortunately, a good Samaritan fellow astronomer showed up, and he helped me quickly remove the tarps and throw them in the car before much damage was done.

I quickly packed everything that had been stored under the canopy into the car, and then added more stakes and more guy ropes (along with bungees) to my small REI tent which was under the steel skeleton of my canopy. I then wandered the observing field to see if I could help anyone else. Several dobs were lying on their sides, and others had had their covers completely blown-off. Most of the "Desert Storm type" telescope covers were shredded like paper, and were flapping loudly in the horrendous wind. Most of the observing field Port-A-Potties were blown over onto their sides, with several having their doors unceremoniously slamming back and forth in the gusting wind. Many wind-blocking tarps lay shredded across the observing field, and several heavy-duty tarps had bent full-sized steel fence posts where they had been pounded deeply into the ground. One of the Texas astrophoto guys had brought along a small portable weather station, and recorded 60-70 mph gusts during the worst of the wind storm! At times it was hard to stand upright!

The giant and very robust lecture/dining tent was bowing-in precariously with the gusting wind, and it looked like it was going to blow-in completely! The star party organizers gathered about a dozen vehicles to try to tie extra ropes to their SUVs to stablize the snapping tent ties! Several people were trying to hold some of the loose tent ropes down when they almost became airborne! They finally decided that the tent just had to come down due to the persistent and worsening gusting wind. It amazes me that they managed to get that huge tent down without anyone getting hurt! I found out later that shortly after the severe wind had started, the public desktop computer and monitor (inside the dining tent) along with the table it was on, had flipped over onto the ground during a strong wind gust. Though damaged, it was still working and got a new life in the (permanent building) vendor hall for the rest of the day. The projection screen in the tent was also badly damaged by the wind before they could take it down.

My DM-6 alt-az mount and ATS pier (which weigh 50 lbs. as a unit) had been covered and tied down to my 30 lb. AGM battery using a bungee the night before. Suddenly, I found that my mount and pier were lying on the ground tarp (with the heavy battery also lying on it's side) after one strong wind gust! Fortunately, I had removed the refractor OTA the night before, and had put it in its protective case! Using extra bungees, I more tightly secured my AstroSystems scope cover against the sides of the mount and pier, and left everything on its side on the ground. This was probably the safest place for them to be, and later I found that none of my equipment had been damaged. We had lunch served to us in the vendor hall, since the main dining tent was disassembled on the ground. After lunch, I listened to more podcasts while resting in my bunk in the bunkhouse. By dinner the winds had died down, so I got around to cleaning up my campsite. My REI Clipper tent had survived the windy onslaught without damage, though several tents lay torn with snapped poles poking through their shredded nylon walls all across the observing field. Three different large "Cabela's" dome tents had survived without a scratch! These tents are rated for mountain base-camp expeditions. Many others had been destroyed. Though my tent was undamaged, it was filled with about a 1/8" layer of a fine yellow powdery dust, that covered everything inside. I had to take everything out and shake it out or brush it off to

remove the dust. An outside vendor who drove-in from Amarillo Texas had spent most of the afternoon rebuilding the dining/lecture tent, so that by dusk, the main tent was up once again and ready for use.

Around dusk, I saw that Mickey from Denver had arrived with his friend Jim (he authored the "Old Stargazers Observing List" booklet). They set-up their two large dobs just to the N.E. of me. Boy, they totally lucked-out by having missed the gale-force winds! Early in the gathering dusk, the annual "Okie-Tex Great Giveaway, Part 1" began, and everyone went to the lecture tent for this popular event. Several great prizes were awarded during this drawing, including two grand prizes of StellarVue 66 APO's! I lucked-out and won a Burgess/TMB Superplanetary 4 mm eyepiece! What a surprise!

I got my scope all ready for another evening of observing, though the skies looked "iffy" in terms of clouds. As the early evening progressed the clouds thinned and everyone began observing. Unfortunately, this lasted for only about 45 minutes after which most of the sky became socked-in with clouds. I hit the sack in my tent at about 11:30 PM after a very eventful and exhausting (windy) day. I was planning on getting up at about 1:00 AM as the local "Clear Sky Clock" predicted good observing after that time.

Friday, 9/22/06

I woke up at 3:45 AM and looked outside my tent. The skies were clear, dark, and quite transparent. Rats! I had overslept most of the wee morning hours and missed most of my planned observing session beginning at about 1:00 AM. I observed for fun without recording my observations until dawn by perusing my Orion DeepMap 600. Many objects were seen in the Southern skies as well as some old favorites in the Winter Milky Way to the East. I observed the Fornax A galaxy (NGC 1316), NGC 1851 (globular cluster in Caelum), the nice planetary nebula NGC 1535 in Eridanus (I could see a double-ring structure with the central star intermittently glimpsed), the E and F stars in the Trapezium in M 42, the Horse-head nebula (again quite easy with averted vision), and several emission nebulae in Orion and Canis Major, as well as some favorite open clusters in Canis Major, Orion, and Puppis. I got a chance to try my new Burgess/TMB Superplanetary 4 mm eyepiece, and though the seeing was only average, it worked splendidly. Dawn ended the fun, and I decided to sleep in the bunkhouse since my tent was no longer surrounded with the canopy and tarps, and would be flooded with light by early morning.

I woke-up for the second time today at about 9:30 AM. The morning had become quite cool and mostly overcast, but no wind was present. I checked the local Clear Sky Clock on the computer, and the forecast looked pretty dismal for the next 2 nights. It appeared that there would be clouds for most of the day and night on Friday, with maybe some chance for clearing by about 2:00 AM on Saturday morning. Saturday during the day looked cool and partly cloudy, but Saturday night was looking "iffy" at best. I therefore made the sad decision to pack up and head back home to Colorado just after lunch on Friday.

I tore down my campsite, my mount and scope, cleared off my bunk in the bunkhouse, and packed everything into the car. I said my farewells to many new friends, and it was right about 3:15 PM on Friday when I left Okie-Tex for Denver under cool and grey skies that threatened rain.

I drove back North along Baca County Road 8 and hit the intersection with Highway 160 back in Colorado. It was sprinkling rain intermittently along the drive home. I drove along Highway 160 through Pritchett, then Springfield, then followed Highway 287 North to Lamar. I then drove NorthWest through Eads and Kit Carson to Hugo and then on to Limon, taking I-70 West back into Denver. It began to rain heavily on I-70 between Limon and Denver, and absolutely poured sheets of heavy rain during the last 20 miles into Denver! I arrived in Denver just after 9:30 PM.

OKIE-TEX STAR PARTY PEARLS:

First, this is a great observing site with some very clear and superbly dark skies, a nice flat and grassy observing field, and great facilities. Most of the amateur astronomers attending this star party are quite serious about their observing and imaging, so it is very easy to undertake an ambitious observing program or do imaging during the week-long star party without many interruptions if you so desire. However, the attendees were very friendly and eager to discuss astronomy and equipment when not seriously observing or imaging the heavens. Much of the equipment I saw was top-notched, and I have never seen as many high-quality APO scopes, RC reflectors, Maks, and high-end mounts and piers at a star party. I counted 4 Paramounts on massive piers at this star party. The greatest number of scopes were still dobs however (many Obsessions and AstroSystems Telekits were seen). A few beginners brought some Orion dobs and some smaller Meade and Celestron GOTO scopes, but they were in the minority. If you are a serious amateur, this is the star party for you!

Okie-Tex has 6 heated bunkhouses which hold about 10 bunks each, and the bunks never completely filled during the whole star party. Bring sheets, a sleeping bag, earplugs and maybe a nocturnal eyeshield if you don't want to be awoken by your bunkmates. They have red lights only at night in the bunkhouses, bathrooms, and in the Cosmic Cafe (which serves sandwiches, hot and cold drinks, and burgers from 10 PM to 3 AM every night - very nice). The bathrooms have several sinks with running hot and cold water, several flush toilets, and 5 hot-water shower stalls each, and they are cleaned daily. Don't forget to bring flip-flops or shower shoes as the floors can get grungy - especially if it is muddy outside after a rain. The catered food is good, hot, relatively inexpensive, and very convenient since you don't have to haul food, coolers, cooking

gear, utensils, etc. to this star party. Also, no dishwashing! You do have to order your meals ahead of time however, at the time that you first pre-register for the star party. Bring your own snacks and plenty of extra drinks for times beyond regular meals. Don't forget to bring some wine or beer (if you desire) for those inevitable cloudy nights when you may actually "party" with your friends.

Wind can be a real problem. It's nice to have a robust wind shield available for the worst nights. Several regular attendees used full-sized steel fence posts which they pounded into the soft ground, and then attached heavy-duty tarps with ball-bungees across these fence posts. Also, even heavy scopes have been toppled by strong wind gusts in the past (a C-14 apparently went down a couple of years ago by report). Again, several regular attendees fixated their pier legs or tripod legs to the ground with large stakes attached to robust bungee cords or used large steel "U" hooks which they pounded into the ground. These guys did not use ground tarps under their scopes so that they could secure their tripods directly to the ground. I thought this was a little obsessive and strange until "Hurricane Howard" came through on Thursday - then I thought these guys were brilliant! Several dobs were knocked over by the 70 mph wind gusts, so if the owners would have had a way to secure the rocker box to the ground (even temporarily) this would not have been an issue. Plan on using a very strong and tough scope cover (AstroSystems or equivalent) and bring plenty of long bungees to hold this cover tightly to the OTA and mount during any wind storms. Most of the regulars survived "Hurricane Howard" with nary a scratch, though most said that this was probably the worst wind ever at Okie-Tex. I saw several scopes without covers, some on their sides, and some with shredded covers among those who were not well-prepared.

I liked having my tent handy for those times when a 1-2 hour catnap during nighttime cloud cover or a quick nap at dusk before observing was in order. Use a tent rated for high winds, and stake it to the ground with large steel tent stakes and extra guy ropes. Have extra stakes, ropes, and bungees handy if the wind gets really bad. This wind problem is not limited to Okie-Tex, and I have heard of similar wind-borne problems at the Nebraska Star Party, Texas Star Party, and others. It's not a bad idea to consider these breezy issues even at FoxPark, though the rocky ground there would make staking-down a pier or tripod difficult at best. I've seen dust devils almost carry a scope away at FoxPark.

Okie-Tex has a high-speed broadband internet connection available to all, including WiFi wireless access across the observing field, and wired Ethernet connections available in the public tent. I could not get my cell phone to connect at this site, but was able to keep in contact with friends and family using E-mail. Don't forget a laptop computer!

Now that I have survived my first "Okie-Tex experience" I plan on attending regularly. With some planning and preparation, this star party is a blast and I made many new friends that I hope to see again in the future!

Shuttle Servicing Mission Approved

http://www.nasa.gov/externalflash/hubreturns_front/index.html

Amateur Extra-solar Planet Observing

I thought you all might enjoy reading about this - Andrea

http://www.mikefleenor.com/exoplanet/wasp1b.htm
http://www.mikefleenor.com/author/author.htm

Ed Morana video of ISS Lunar Transit

I was able to video a nice detailed ISS lunar transit, with the new solar arrays. The ISS passed near crater Tycho. The ISS was right on time and where it was expected to be!

Videos, pictures and details on my website: http://pictures.ed-morana.com/ISSTransits

Ed Morana

Best Looks

Moon	By Saturn 11/12 and 13; 7 degrees below Mercury 11/19; by Jupiter 9/26
Mercury	Transit starts 1212 pm on Nov 8. Predawn last ½ of month
Venus	Hidden by Sun
Mars	Difficult in ESE at sunrise end of month
Jupiter	Low in SW at sunset
Saturn	High after middle of night
Uranus	In Aquarius eves
Neptune	In Capricornus eves

From:
Daniel Laszlo
2001 S Shields St Building H
Fort Collins CO 80526

TO:

International Space Station Passes for Fort Collins -- Loveland November 2006

Date	Mag	Starts			Max Alt			Ends		
		Time	Alt	Az	Time	Alt	Az	Time	Alt	Az.
30 Oct	1.7	18:05:37	10	N	18:06:24	11	N	18:06:50	11	NNE
31 Oct	1.5	18:26:17	10	NNW	18:27:25	15	N	18:27:25	15	N
01 Nov	1.6	18:47:10	10	NW	18:48:01	16	NNW	18:48:01	16	NNW
02 Nov	1.2	17:33:57	10	NNW	17:35:46	16	NNE	17:37:23	11	ENE
02 Nov	2.3	19:08:17	10	NW	19:08:41	13	NW	19:08:41	13	NW
03 Nov	0.2	17:54:45	10	NW	17:57:18	29	NNE	17:58:08	24	ENE
04 Nov	-1.1	18:15:46	10	NW	18:18:34	85	N	18:19:01	60	ESE
05 Nov	1.1	18:37:12	10	WNW	18:39:39	27	SW	18:40:05	25	SSW
06 Nov	-1.0	17:23:06	10	NW	17:25:54	76	NNE	17:28:44	10	ESE
07 Nov	1.1	17:44:24	10	WNW	17:46:56	30	SW	17:49:26	10	SSE
10 Nov	3.2	17:13:56	10	WSW	17:14:46	11	SW	17:15:36	10	SSW
15 Nov	3.3	06:16:51	10	SE	06:17:36	11	SE	06:18:20	10	ESE
18 Nov	1.3	05:42:03	10	SSW	05:44:34	28	SE	05:47:07	10	ENE
19 Nov	-1.0	06:02:15	10	SW	06:05:08	83	NNW	06:08:00	10	NE

Comet SWAN by Brian Kimball, LAS