

The Objective View

Newsletter of the Northern Colorado Astronomical Society

November 2011

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append ncastro.org to complete email address

Next Meeting: November 4 7:30 pm

Nightscape Imaging: Maps, Gas and Bits

by Robert Arn, Colorado State University

Club Business at 7:15 pm

**Estes Park Memorial Observatory
1699 Manford Ave, Estes Park CO**

http://nightsky.jpl.nasa.gov/event-view.cfm?Event_ID=24752

<http://www.aaf-epmo.org/AngelsAbove/Information/map-information.htm>

NCAS Programs

Dec 2 Telescope Clinic, Members Show and Tell
Meet at Little Thompson Observatory, Berthoud

www.skykids.org

City of Fort Collins Natural Area Program at Sunset

Bobcat Ridge Nov 5
Fossil Cr Reservoir Nov 18

<http://www.fcgov.com/naturalareas/finder/bobcat>

<http://www.fcgov.com/naturalareas/finder/fcopenspace>

Dark Site Observing Dates

Nov 25, 26: Keota or other site, ask FRAC newsgroup

Other Events

Chamberlin Observatory Open House, 7 to 10 pm

Nov 5, Dec 3, Jan 28, Mar 3

303 871 5172 <http://www.du.edu/~rstencil/Chamberlin/>

Cheyenne Astronomical Society 7 pm Nov 18 TBA

Cheyenne Botanic Gardens.

<http://home.bresnan.net/~curranm/>

CSU Madison Macdonald Observatory Public Nights

On East Drive, north of Pitkin Street

Tuesdays after dusk if clear, when class is in session

Estes Park Memorial Observatory EVAS meeting,

7 pm Nov 17 TBA <http://www.angelsabove.org/>

Little Thompson Observatory, Berthoud 7 pm Nov 18

Chief Sam Moves Camp and Jim Tolstrup: Lakota Star

Knowledge. <http://www.starkids.org>

Longmont Astronomical Society 7 pm Nov 17 Nightscape

Photography, by Robert Arn. IHOP 2040 Ken Pratt Blvd

<http://www.longmontastro.org/>

October 6 Program: Evolution of My Telescope. A Case Study: 40 Years of Procrastination, by Michael Hotka, Ball Aerospace

Michael started sketching his planned telescope in 1971. With materials and skills at hand, it would have a steel equatorial mount. He dreamed of a 12 inch scope and in 1973 bought a mirror from Coulter Optical Company for \$175. He used a motor from an ice cube maker for the drive. By Fall 1974 his scope was assembled, but the twisty steel made the mount too flexible. He scavenged gas pipe from the dumpster, finding 2 to 6 inch pipe looking for a home. By 1970 he was in college by then and could access the U of Iowa machine shop. He remade his mount as a fork. He put together variable-speed drill motors in different gear boxes for tracking. The f/8 mirror required a very long tube. He made removable cells for his mirror and secondary. Collimation remained good. By the mid 1980s the Dobsonian revolution was sweeping ATMs. Mike built a plywood Dob mount. He used 4 inch PVC flanges riding on chair footpads. The scope changed little until 2006. Randy Cunningham advised adding a tube end baffle to help contrast, and Mike saw immediate improvement. He could plainly see magnitude 14.5 galaxies at Okie-Tex. A mirror fan was added for cooling. It helped speed up cooling, but left his primary dusty, in spite of filters. He has a dew heater on the secondary. August 11, 2010, was the sad final day for this incarnation of his scope. In 1989 Mike had drawn up plans for a truss Dob configuration. He got aluminum tubing that year, beating the considerable price increase since.

He planned to build a stepper-controlled mount running with Mel Bartels' software. He made a 9 point flotation primary cell. The upper cage had a JMI 2 speed focuser and Astrosystems clamps. In 2002, Longmont Astro Society was building scopes for schools. Mike bought a pregenerated 12 inch blank, and Jerry Wilkinson figured the mirror. He planned to use the scope from a home observatory. This started as a roll-off shed. He then had to bring his motorhome home due to critters munching the wires. It cleared by 4 inches. Due to space, the shed has moved to become a garden shed. In September 2006 Mike elected for some simplicity. He decided to build a Telekit look-alike, with Randy Cunningham's assistance. He was using roller bearings set in plywood. He was still planning the Mel Bartels drive, which takes a 386 computer. Mike made the large gears by using threaded nylon rod as mold for JB Weld epoxy. The stepper motors were loud unless isolated with a rubber bushing. At TSP 2010 he got feedback from ATM friends. He learned of a finder platform mount to put it at comfortable height. He decided to jumpstart completion of his dream scope. He picked up quite a few mechanical parts. In August 2010 he got a ServoCat Jr and Sky Commander. As he got the parts together, Mike addressed the need to counterbalance the long tube. He was aware of Tom Krajci spring counterbalance design. Avoiding 65 lb of counterweight had great appeal. Farm Fleet stores were a great source of springs. With some minor trials, the springs work great. When first light arrived, Mike was pleased that his eyepieces would focus. But the rocker tended to tip, which he stabilized by adding outriggers to his base. On July 28 2011 he had the first "dark" light at Foxpark and had some great skies there. He has since made some fixes to his transport dolly. A wireless goto system has appeal. Is his scope done yet? Mike is still a tinkerer who will find something. He will be happy to share views in the years to come.

Michael Hotka is a software engineer at Ball Aerospace. He creates the programming that mediates communication with spacecraft. He has logged thousands of observations for the Observing Clubs of the Astronomical League, currently working on Flat Galaxies with his current Dob incarnation.

October 6 NCAS Club Business

President Rob Grover called the meeting to order. He reported an excellent experience at the Nebraska Panhandle Star Party at Agate Fossil Beds National Monument. Treasurer Dave Auter reported club funds stand at \$459.73. Tom Teters proposed a run of club t-shirts. There is good interest from members. Tim Antonsen may work with Tom on updating our club logo. Greg Halac announced upcoming events. This years outreach has been extremely busy and successful in large measure to Greg's coordination. Thanks to Greg and our intrepid volunteers! Paul and Debra Price attended a Sky Ranger program at Acadia National Park in Maine. They will be soon enjoying southern skies from the Everglades for vacation. RASC calendars have arrived for 2012.

From Rob Grover: Soapstone Prairie Starwatch Oct 22

A fun night out under the stars @ Soapstone Saturday night. Thanks to Mike F & David A for making the drive north! The City of Ft. Collins presented a meteor program under the dark skies at Soapstone Prairie Open Space. Joan & Bill must have given a great talk because the 27 guests were sure excited to look through the telescopes. I had a rather long line to view Jupiter through the refractor and there were lots of enthusiastic "WOW"s. Even the rather early looks, as Jupiter sat fairly low, were almost acceptable. By 8:00, the cloud bands were quite obvious and the seeing would stabilize for brief, crisp views. Great views of M13, M17, M57, M11, M31, M45, the Veil, NGC 7789, the Double Cluster, too. Some through the refractor and some through the dob. Glad I set up 2 scopes. Mike and David showed some other objects as well.

Around 9:00PM, the wind picked up and most of the crowd left. Wind was strong enough to make use of the dob nearly impossible. We stayed for about another hour before packing up and heading home, so it was an early night. Of course, as we packed up, the wind died down a little bit. Was torn about staying out longer, but I was beginning to run out of steam and knew I had about a 40 minute drive to get home. While the time under the stars was rather brief, the views before the wind were beautiful. Even though this was an Orionid Meteor Shower observing event, I didn't see any last night. Some of us saw a really nice bolide at Bobcat Ridge Friday, so I wasn't totally meteor skunked for the weekend.

Hope the folks at Crow Valley & Keota got in a great night.

Robert Grover

From Bill Tschumy and John Warren: Crow Valley – Greeley Visitors Bureau Starwatch Oct 22

We had a nice night at Crow Valley. I guess I didn't read the email carefully enough and arrived at 4:40 hoping to get set up and enjoy the late afternoon. Of course, no one else was there yet so I twiddled my thumbs for about an hour. The gate was unlocked so I could at least get into the park, but didn't know where to set up given this was my first time there. The wind was pretty strong during my wait and I wondered if it would be a problem as the evening progressed.

John Warren arrive about 5:45 and I was relieved that I was in the right place. Others started to arrive around 6 PM and eventually we had 6 or 7 scopes on the field. The wind died and it looked like nice evening was in store.

The bus with the guests arrived around 7 PM and after they received an orientation talk, they walked down to our observing a bit before 8. Didn't get an accurate head count but it felt like 25 or 30 people.

After some initial high cirrus, the sky seemed to mostly clear off. We showed the usual assortment of eye-candy and they all seemed impressed and asked good questions.

The seeing was marginal as usual. Not a good night for double star or planetary work. However, around 11 PM the seeing did seem to settle a bit and got some decent views of Jupiter. The two main belts were prominent with detail and at times 3 or 4 lesser bands popped out.

The crowd left around 9:30 and that left us to our own observing. I poked around looking at dim stuff on the edge of visibility. Also explored objects in the dim "water" constellations (Cetus, Aquarius, Pisces, etc).

Lately I've found a perverse fascination with finding an object and then zooming in on it using SkySafari with a FOV indicator that matches my scope's FOV. I then just enjoy matching the faint field stars with what I see in SkySafari. It never ceases to amaze me that our maps accurately depict what is really out there.

Started packing up a bit after 11 and left around 11:40. My car thermometer said 35° as I was driving out.

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Bill Tschumy
Think Astronomy -- Longmont, CO
<http://www.thinkastronomy.com>

From John Warren:

Thanks for the fun report sounds like a fun and successful event. You NCAS guys are doing awesome amounts of Public Viewing. Up to about 60 nights this year I heard - wow good job to all for spreading the astronomy vibe! Crow valley was way good, successful and fun. Being a native Greeley kid it was fun to chance upon some high school grad classmates in the bus load. They had a great time. It was fun to facilitate that. I need to head out for some daytime activities so I will leave a more detailed report hanging in the wind.... a little wind before sunrise. Orionids in the wee hours were the delight that made the evening one to remember.

Clear Dark Skies! John

From Gary Garzone and Robert Arn: Keota Report Oct 22

Hey Greg, Bill, and Robert Grover, Glad you guys got a decent night in at Crow Valley and Soapstone ranch outreach program. Another stellar night for us at Keota. Robert Arn and I spent the night observing faint fuzzies, plus my usual long list of favorites, you know, too many to name. We did at least 60 objects thru the night which started at 7 PM till 4 am or later for me, 5 am for Robert Arn who was doing meteor picture frames. We got to see many meteors thru the night, at least hundred or so, some very bright long trains with trails that took few seconds even to disappear. Wow! Meteor

shower was a bonus night for us. No clouds or wind all night, with near excellent seeing until about 1:30 am, while we were keeping our eye on Jupiter, Red spot timing was 2:30 am, but by then seeing had gone back to usual so, so views. Earlier the seeing was good, easily see shadow transit on surface of Jupiter, nice belt details even. Jupiter does get very high in sky, we joked it was in Dob's hole trying to track it with big scope. Orion, Veil, Crescent nebulas were the best views of night? And few faint globulars, where dark skies rule. Heck they are all good views. Some barred spiral galaxies, were easily seen with high powers. Sky Safari was used for red spot timing thanks to Bill T, what a great astronomer tool. Nice to look things up so quickly, better than laptop but still too bright a screen for outside views, need to make list and work on it for best dark sky views.

I cleaned up many shot gun casing shells and shot up bottles, somebody was out there shooting and left a mess. I cleaned it all up. I am sure it was not an astronomer who left the mess, somebody is invading our area. Maybe next weekend for more views if weather is good.
bye, Gary

From Robert Arn:

I headed out to Keota last night. When I got there at 5:45 I found that Gary was already there and setting up his 30. As the sun started to set around 6, there was not a cloud in the sky. I managed to get a sequence of it for an upcoming short clip astro movie I am working on.

Once it got dark, I finished setting up my first photography setup for the night and as my camera was doing the work, we used Gary's scope to hunt down a bunch of faint fuzzies. From about 8 to midnight the transparency was excellent and the seeing was above average and there was no wind to speak of. Caught Jupiter several times and even watched one of the moons cast a shadow. Skysafari told us that the red spot was going to be visible about 2:30, but by then the seeing worsened - so, at least, I was not able to make it out. Spent the rest of the evening watching the meteor shower. My camera kept clicking away until about 5am when the battery finally died. Temperature gauge read at 29°F, but with no wind it did not feel too bad. Visually I saw 70-100 meteors all night. My camera "saw" 18 meteors - 15 of which are in this image:

<http://www.astroarn.com/solarsystem/h3ed09554#h3ed09554>

Recently acquired a new toy - a 12nm H-Alpha Filter. I used that in conjunction with a double fog filter to produce the image. Shot details are below on my site.

Overall, that was one of the best nights, astronomy-wise, I have had all year, outside of Bryce.

Cheers,
Robert Arn
www.astroarn.com

Mira in Cetus at Historic Max Brightness at Mag 2

Asteroid 2005 YU55 at 11th Magnitude in Pegasus Nov 8
 This 400 meter asteroid will approach within 1 lunar distance, close enough to move 7 arcseconds per second. For info see:

<http://neo.jpl.nasa.gov/news/news171.html>

SkySafari has this object in the database, find with the Search function.

Leonid Meteor Maximum with Last Quarter Moon Nov 17-18

Best Looks

Moon By Jupiter Nov 8 and 9; by Mars Nov 18
 By Saturn Nov 22; by Venus Nov 26
 Mercury Low in W at sunset first 2 wk of month
 By Venus
 Venus Low in W eves. By Antares & Mercury on Nov 11
 Mars By Regulus Nov 10 in am
 Jupiter High in S middle of night. Opposition 10/28
 Saturn In SE in dawn end of month
 Uranus Late in evening in Pisces
 Neptune In evening in Aquarius
 Pluto In S early in evening in Sagittarius

International Space Station Passes for Loveland – Fort Collins

November 2011

Date	Mag	Starts			Max. <u>Altitude</u>			Ends		
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
1 Nov	-2.3	18:54:20	10	NW	18:57:11	29	NNE	18:58:33	21	ENE
1 Nov	0.0	20:30:25	10	WNW	20:30:55	13	WNW	20:30:55	13	WNW
2 Nov	-3.4	19:33:02	10	NW	19:36:13	78	SW	19:36:24	74	S
3 Nov	-3.1	18:35:52	10	NW	18:38:58	49	NNE	18:42:02	10	ESE
3 Nov	-0.6	20:12:39	10	W	20:14:25	17	WSW	20:14:25	17	WSW
4 Nov	-2.0	19:14:45	10	WNW	19:17:44	37	SW	19:20:17	13	SSE
5 Nov	-3.4	18:17:18	10	NW	18:20:27	87	SW	18:23:38	10	SE
6 Nov	-0.6	17:56:37	10	W	17:58:57	19	SW	18:01:18	10	S
7 Nov	-1.9	16:58:40	10	WNW	17:01:41	42	SW	17:04:42	10	SSE
15 Nov	-0.4	06:03:46	10	S	06:06:04	19	SE	06:08:21	10	E
17 Nov	-1.9	05:43:23	10	SSW	05:46:16	37	SE	05:49:08	10	ENE
18 Nov	-0.6	04:47:06	13	SSE	04:48:31	17	SE	04:50:34	10	E
18 Nov	-3.2	06:21:21	10	WSW	06:24:20	47	NNW	06:27:19	10	NE
19 Nov	-3.4	05:24:55	29	SW	05:26:20	77	SE	05:29:24	10	NE
20 Nov	-0.6	04:30:01	19	E	04:30:01	19	E	04:31:11	10	ENE
20 Nov	-2.4	06:02:21	14	W	06:04:28	28	NNW	06:07:12	10	NE
21 Nov	-2.5	05:07:09	38	NNE	05:07:09	38	NNE	05:09:19	10	NE
22 Nov	-1.8	05:44:03	19	NNW	05:44:28	20	NNW	05:46:50	10	NNE

23 Nov	-0.6	04:48:29	13	NNE	04:48:29	13	NNE	04:48:56	10	NE
23 Nov	-1.1	06:21:35	10	NW	06:22:54	12	N	06:24:11	10	NNE
24 Nov	-1.2	05:25:02	14	N	05:25:02	14	N	05:26:15	10	NNE
25 Nov	-0.9	06:01:50	10	NNW	06:02:44	11	N	06:03:38	10	NNE
26 Nov	-1.0	06:39:46	10	NNW	06:41:08	12	N	06:42:30	10	NE
27 Nov	-0.8	05:41:48	11	N	05:42:23	11	N	05:43:17	10	NNE
28 Nov	-1.1	06:18:47	10	NNW	06:20:39	15	NNE	06:22:30	10	NE
29 Nov	-0.8	05:21:52	12	N	05:21:52	12	N	05:23:04	10	NNE

ISS predictions can be obtained from:

<http://www.heavens-above.com/main.aspx?lat=40.4997&lng=-105.05736&loc=Fort+Collins+CO+USA&alt=0&tz=MST>

Asteroid 2005 YU55 JPL Horizons Ephemeris for Fort Collins CO at 2 minute intervals starting at Evening of Nov 8, 1900 MST

Date__(UT)__HR:MN R.A.__(ICRF/J2000.0)_DEC APmag

2011-Nov-09 02:00 m 21 48 17.40 +15 03 38.2 11.27
2011-Nov-09 02:02 m 21 49 18.11 +15 06 50.7 11.26
2011-Nov-09 02:04 m 21 50 18.63 +15 10 01.5 11.26
2011-Nov-09 02:06 m 21 51 18.98 +15 13 10.5 11.25
2011-Nov-09 02:08 m 21 52 19.15 +15 16 17.8 11.25
2011-Nov-09 02:10 t 21 53 19.13 +15 19 23.4 11.24
2011-Nov-09 02:12 m 21 54 18.93 +15 22 27.3 11.24
2011-Nov-09 02:14 m 21 55 18.54 +15 25 29.4 11.24
2011-Nov-09 02:16 m 21 56 17.97 +15 28 29.9 11.23
2011-Nov-09 02:18 m 21 57 17.21 +15 31 28.6 11.23
2011-Nov-09 02:20 m 21 58 16.26 +15 34 25.6 11.22
2011-Nov-09 02:22 m 21 59 15.12 +15 37 20.9 11.22
2011-Nov-09 02:24 m 22 00 13.78 +15 40 14.6 11.22
2011-Nov-09 02:26 m 22 01 12.26 +15 43 06.5 11.21
2011-Nov-09 02:28 m 22 02 10.53 +15 45 56.8 11.21
2011-Nov-09 02:30 m 22 03 08.62 +15 48 45.3 11.21

This tool provides a web-based *limited* interface to [JPL's HORIZONS system](#) which can be used to generate ephemerides for solar-system bodies.

Current Settings

Ephemeris Type [[change](#)] : **OBSERVER**

Target Body [[change](#)] : **Asteroid (2005 YU55)**

Observer Location [[change](#)] : **Fort Collins, CO (105°04'58.8"W, 40°34'48.0"N)**

Time Span [[change](#)] : Start=**2011-11-09-02:00**, Stop=**2011-12-09-03:00**, Step=**2 m**