The Objective View

December 2011

Newsletter of the Northern Colorado Astronomical Society

Robert Grover, President
pres@
Tom Teters, Vice President 970 482 5702
vp@
Dave Chamness, Secretary and AL Correspondent
sec@ 970 482 1794
Dave Auter, Treasurer 970 204 6919
treas@
Greg Halac, Web Editor and Outreach Coordinator
outreach@ 970 223 7210
Dan Laszlo, Newsletter Editor
objview@ office 970 498 9226

append ncastro.org *to complete email address*

Next Meeting: December 2 7:30 pm

Telescope Clinic, Members Show and Tell

by NCAS Members

Club Business, Nominations at 7:15 pm

Little Thompson Observatory
950 Spartan Ave, Berthoud CO

www.starkids.org

NCAS Programs

Jan 5 Randy Cunningham Astrosystems
Coors Room, McKee Conference Center
2000 N Boise Ave, Loveland CO

Feb 2 Dr. Suzanne Metlay "What Time is It?"
FRCC

City of Fort Collins Natural Area Program

Fossil Cr Reservoir Dec 10 5 to 7:30 am
Total Lunar Eclipse

Dec 30 7 pm

http://www.fcgov.com/naturalareas/finder/bobcat
http://www.fcgov.com/naturalareas/finder/fcopenspace

Dark Site Observing Dates

Dec 23, 24: Keota or other site, ask FRAC newsgroup

Other Events

Chamberlin Observatory Open House, 7 to 10 pm
Dec 3, Jan 28, Mar 3
303 871 5172 http://www.du.edu/~rstencel/Chamberlin/

Cheyenne Astronomical Society 7 pm Dec 16 Members
Christmas Party, Elections 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 Dec 15 TBA http://www.angelsabove.org/

Little Thompson Observatory, Berthoud 7 pm Dec 23. Star of Wonder, by John Ensworth. http://www.starkids.org

Longmont Astronomical Society 7 pm Dec 15 TBA.
IHOP 2040 Ken Pratt Blvd http://www.longmontastro.org/

November 4 Program: Nightscape Imaging: Maps, Gas and Bits, by Robert Arn, Colorado State University

Little is left to chance in Robert's photography. He carefully assesses prospective sites with all the map resources he can muster. Topo maps, Google Earth, Google Images, the Dark Sky Finder website . . .
http://www.jshine.net/astronomy/darksky

The weather is critical and he likes to use Weather Underground for radar and satellite maps, and the Clear Sky Chart. The Moon is a convenient source of foreground light. Stellarium is a freeware astro program handy for tracking the Moon. There is no substitute for scouting sites so he has put on hundreds of miles. A partly cloudy evening sky is a good omen. He is using a DSLR with APS sensor and frequently a 20 mm lens. This gives a good balance of sky coverage and detail. A wider angle lens would avoid stitching, but he would lose detail in the final image. It is better to stitch a mosaic for best detail. He sets his ISO to keep exposures relatively short. Stacking and processing will address the noise. He is happy to shoot in the winter since cooler temps lower the noise. He has an inexpensive intervalometer which is a great timesaver. He shoots either on a fixed tripod, or with an Astrotrac drive. Focusing is a challenge. Live view in the camera LCD is key for accurate focus. He checks the picture histogram to be sure the exposure is not clipping accidentally. He showed examples of black clipping in a silhouette, and white clipping which may not detract from photos with the Moon. If shooting around New Moon, spotlights are handy to paint foreground subjects. In a typical single shot he will collect as

much light as possible. High ISO setting gives lots of noise, dealt with processing with Topaz or Noise Ninja. A wide open lens gives distorted stars in the corners. He will get sharpness by closing the lens a little to f/4. He will pick the widest lens possible. Extreme wide angle lenses are prone to astigmatism and chromatic aberration. He has a 20 mm, giving 60x40 degrees, his most used lens. He will take multiple exposures at various expoure times and combine them. The time of astronomical twilight is the blue hour for photography. The sky looks dark to the eye, but photos look almost day-like. It is like the golden hour of for landscape photographers. An exposure of a few seconds picks up the Big Dipper stars, planets and landscape. Five seconds, f/3.2 and ISO 100 got Venus, Taurus and the Pleiades. At 0.4 s f/2.8 and ISO 800 he caught Saturn, Mars and Venus. Processing is critical for best results. Photoshop is great. GIMP is good but is limited to 8 bit range, a limited dynamic range. Topaz Denoise and Noise Ninja work well. Other useful software includes Photomatrix Pro, Topaz Adjust, PTGUI, and HDR Mosaics. Robert gave examples of increased saturation, curve adjustment, and star brightening. Photoshop CS5 has a Create function which can generate overexposed and underexposed versions. Mosaic stitching allows him to generate a 40,000 by 50,000 pixel image, then scale down. He can fix trees blowing or people moving. Autoalign on foreground and Autoblend the sky are huge time savers. He puts several images in a layers, then uses Autoblend to erase the extra stars. His newest project is high dynamic range nightscapes. Cameras have limited dynamic range. By combining a range of exposures in software, an image can span a range well beyond the eye's capability. He showed an image from Canyonlands National Park which was impossible to capture with a single exposure due to shading in an archway. He has combined foregrounds lit by moonlight with later exposures of starry sky after moonset. Such images at his website are shown for Buford,Wyoming and Rocky Mountain National Park. He enjoys images with people in the foreground, but they are very challenging. It is hard not to move during the exposure, so <1% of exposures typically are usable. In VHDR imaging, different parts of the image have different dynamic ranges. Robert then closed with a show of his superb high resolution images. See info on his astrophotography ebook and the latest of Robert's work at:

www.astroarn.com

His latest note:

I am finally getting a break from school and thought I would process some of my backlog of images. So here is the first one. Taken around the end of September, I convinced a couple people to go up to 13,000ft and sit on the ground for a few hours. And using *almost* every piece of photography/ astronomy equipment that I own, I created this:

http://www.astroarn.com/nightscape/h372e808e#h372e808e

Robert is a Ph.D. student in Mathematics at Colorado State University. His spectacular images have been selected for the Astronomy Picture of the Day and Spaceweather.com.

From John Warren: The Keota Flaming Vents are Gone!

Observed at the usual site until almost 12 last night.
Good news first:
All Keota Flaming vents are gone! Things are darker!
It is nice to be rid of these 3 flaming towers that were 1 - 3 miles from the site. Now we have a new light pollution source: A new set of "Portable Suns on Stadium Towers" are now boiling in from about 10 - 11 miles west of the site.
They are very low on the horizon but very intense. A little surprising from that distance. I needed a taller vehicle to hide behind. These are right on HWY 14 just west of road 93. This looked like a truck stop with vehicles parked in line, coming and going and lots going on all night as I returned home around midnight. These lights are way brighter than a semi with high beams coming at you as you traverse Highway 14. Hopefully this too will be temporary.

Observing was good! I just had to get out to dark skies with the scope before the Thanksgiving holiday break was done. Nice skies but not great seeing conditions. A pretty decent Milky Way from Cygnus clear across to the east.
A lot of Galaxies were looking quite good. I have a seasonal favorite with NGC 891. I spent a long time with this single object, what an awesome galaxy from edge on! I hunted down some new faint galaxy groups and planetary nebulae from lists. Did a tour of a bunch of favorite objects.

After breaking down and loading up for home I took a rest and had about 20 minutes of absolutely prime with the binoculars and lawn chair. With that amount of bivouac gear 10 degrees F doesn't seem bad at all. Hope everyone had a great holiday!
Clear Dark Skies to all
John

From Andrea Schweitzer: Phil Plait Asteroid Talk on TED

It's good to see Phil Plait and his asteroid talk
getting wide coverage on the main Ted talks website,
and he nicely ties in Colorado landmarks.

Phil Plait: How to defend Earth from asteroids
http://www.ted.com/talks/phil_plait_how_to_defend_earth_from_asteroids.html

Successful Sighting of YU55

From Bill Tschumy: I just came in from a successful sighting of YU55. I was using my TEC 180 and it was not too difficult a target. It required averted vision, but it was there 100% of the time.

I found a star it was going to pass nearby and waited just a few minutes and saw it pass into view. I think they were on the

money for magnitude estimates. 11.2 is about what I got by comparing to other field stars.

Transparency was somewhat poor as there was quite a bit of water vapor up high. Seeing was quite good though. Swung it over to Jupiter and it was one of the best views I've had in a while.

From Mike Prochoda: I just got in (freezing cold) from a successful observation of the NEO asteroid 2005 YU55. SkyTools 3 had the asteroid plotted on its most recent asteroid update on their website, so I downloaded it to the program. I setup my C-11 on the CGE mount in my Estes Park backyard. Man was it cold tonight with a stiff breeze at times causing me to shiver even in my full winter observing attire. Anyhow, I could follow the movement of the asteroid in real-time in the Skytools 3 program on my netbook, but I couldn't for the life of me get my bluetooth link going to connect my netbook to my CGE mount - Rats! I had to anticipate the movement of the asteroid using the program, and I finally saw that it would pass the mag. 5.9 star SAO 107729 in Pegasus. I slewed my CGE mount to the star using the hand paddle, and voila, at the appointed time, the asteroid slowly passed near the star exactly as plotted in SkyTools 3. I then manually followed the asteroid by slewing (mostly to the East but with occasional tweaks to the North) through the neck of Pegasus. Using field stars I was able to estimate the magnitude at between 11.0 and 11.5 while following it from 7:45 MST until about 8:15 MST. By then I was chilled to the bone and called it quits.

The asteroid was easily visible with direct vision in the C-11 using my 18mm Radian eyepiece (155x). It passed many interesting geometric star patterns and I could always detect the asteroid's motion after only about 5-10 seconds of looking in the eyepiece at 155x. It appeared stellar with no variation in brightness during my 30' observing run. The speed of movement reminded me of some geostationary satellites I have observed in the past.

I hope others got a chance to see this interesting interloper within the moon's orbit (I see that Bill Tschumy had a successful observation this evening).

Cheers,
- Mike Prochoda (Estes Park)

From Mike Hotka: I decided to ask Gary Garzone if I could use one of his apeture buckets to see if we could find the asteroid. He had the 25 inch setup, at 156x when I arrived. I star hopped to the star gate I had predicted the asteroid would pass through and waited.

I almost missed it...

I was looking for something pretty faint, but in Gary's monster, the asteroid was "bright" and obvious to direct vision. Only when it was bearing down on a star of similar brightness did I first notice it. Gary was imaging away in his dome, trying to point his scope ahead of it and snap pictures. From previous posts, Gary caught it also.

We watched it make and dissolve triangular asterisms in the star fields as it moved east for the next 30 minutes. On thing I noticed that it was moving east almost as fast as the field of view drifted west because of the Earth's rotation. This made the asteroid almost stationary in the eyepiece.

Pretty cool event.

Mike

Total Lunar Eclipse December 10 at Moonset. Enters umbra at 0545 MST. Totality 0705 as the Moon sets by 0715.

Geminid Meteor Maximum with Gibbous Moon Dec 13 - 15

Best Looks

Moon	By Jupiter Dec 6; by Mars Dec 17
	By Saturn Dec 19, 20; Mercury Dec 22, 23
	By Venus Dec 26, 27
Mercury	Low in SE predawn last 2 wk of month
Venus	Low in SW eves.
Mars	High in S predawn
Jupiter	High in S late evening
Saturn	In SE in dawn end of month
Uranus	In evening in Pisces
Neptune	In evening in Aquarius

Sunset Geese, Nov 26 2011 from Tom Teters

International Space Station Passes for Loveland – Fort Collins December 2011

Date	Mag	Starts			Max. Altitude			Ends		
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
1 Dec	-1.2	05:26:44	16	N	05:27:13	17	NNE	05:29:18	10	ENE
2 Dec	-2.6	06:04:43	15	NW	06:07:01	41	NNE	06:09:55	10	ESE
3 Dec	-1.6	05:10:23	23	NNE	05:10:23	23	NNE	05:12:42	10	E
3 Dec	-2.8	06:43:30	10	WNW	06:46:25	42	SW	06:49:18	10	SSE
4 Dec	-3.6	05:48:28	31	NW	05:49:45	82	NNE	05:52:48	10	SE
5 Dec	-1.2	04:54:14	25	E	04:54:14	25	E	04:55:52	10	ESE
5 Dec	-1.7	06:26:38	10	W	06:28:58	20	SW	06:31:18	10	S
6 Dec	-3.1	05:32:27	45	SW	05:32:27	45	SW	05:35:19	10	SSE

7 Dec	-0.2	04:38:20	13	ESE	04:38:20	13	ESE	04:38:45	10	ESE
8 Dec	-0.9	05:16:42	14	S	05:16:42	14	S	05:17:20	10	S
13 Dec	-0.5	18:41:04	10	S	18:41:15	11	S	18:41:15	11	S
14 Dec	-0.9	17:46:31	10	SE	17:47:06	10	SE	17:47:11	10	SE
15 Dec	-2.4	18:22:59	10	SSW	18:25:26	38	S	18:25:26	38	S
16 Dec	-1.7	17:26:55	10	S	17:29:26	21	SE	17:31:13	14	E
16 Dec	-0.7	19:02:20	10	WSW	19:03:36	20	W	19:03:36	20	W
17 Dec	-3.5	18:05:20	10	SW	18:08:35	87	NW	18:09:18	51	NE
18 Dec	-2.6	17:08:44	10	SSW	17:11:50	41	SE	17:14:54	10	ENE
18 Dec	-1.2	18:45:18	10	W	18:47:18	23	NW	18:47:18	23	NW
19 Dec	-2.6	17:48:00	10	WSW	17:51:09	45	NNW	17:52:52	22	NNE
20 Dec	-3.3	16:51:01	10	SW	16:54:16	87	SSE	16:57:32	10	NE
20 Dec	-1.2	18:28:26	10	WNW	18:30:45	18	NNW	18:30:45	18	NNW
21 Dec	-1.8	17:30:54	10	W	17:33:46	27	NNW	17:36:14	12	NNE
22 Dec	-1.0	18:11:40	10	NW	18:13:34	14	NNW	18:14:02	14	N
23 Dec	-1.3	17:13:59	10	WNW	17:16:26	19	NNW	17:18:52	10	NNE
24 Dec	-0.9	17:54:55	10	NNW	17:56:21	12	N	17:57:15	11	N
25 Dec	-1.1	16:57:11	10	NW	16:59:09	15	NNW	17:01:07	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