

The Objective View

Newsletter of the Northern Colorado Astronomical Society

May 2012

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Next Meeting: May 3 7:30 pm

Suborbital Space Missions

By Dr. Dan Durda, SWRI

Club Business at 7:15 pm

**Coors Room, McKee Conference Center
2000 N Boise Ave, Loveland CO**

Enter campus at 19th and Boise. Drive to Wellness Center Parking north of the buildings. Enter Wellness Center at its NW corner and proceed straight to the Coors Room.

NCAS Programs at McKee Conference Center

June 7 Randy Cunningham Observing Tips, Filters
July 5 Ray Warren Messenger Mission to Mercury
Aug 2 Daniel Greenridge Bioblitz Dark Sky Volunteering

City of Fort Collins Natural Area Program

Fossil Creek Reservoir 6 pm May 20 Eclipse
9 pm May 26
9 pm Jun 23

Bobcat Ridge Nat Area 815 pm May 24
930 pm Jun 9
930 pm Jul 12

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

Dark Site Observing Dates

May 15, 16: Keota or other site, ask FRAC newsgroup

Other Events

Chamberlin Observatory Open House, 7 to 10 pm

May 26, Jun 23, Jul 28

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

Cheyenne Astronomical Society 7 pm May 18 TBA

<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 May 24 TBA <http://www.angelsabove.org/>

Little Thompson Observatory, Berthoud HS 7 pm May 18

Discovery of Neptune Mike Hotka, Ball Aerospace

<http://www.starkids.org>

Longmont Astronomical Society 7 pm May 17 TBA

President's Room, La Vita Bella Coffee House 475 Main St

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

April 5 Program: Virgo Cluster Walkabout By Tom Fay, Hewlett-Packard

This is an amateur astronomer's rite of passage. Tom recalls confronting the Virgo Cloud was with his first scope. With a Dobsonian, he could readily see many but the identities were a mystery at first. The perfect tools for dissection of the cloud are Modern Sky Surveys, in this case the Sloan Digital Sky Survey. The cluster is about 55 million light-years away and 7 million l-y in diameter. The brightest part covers 6 degrees. There are about 2000 galaxies, a mix of ellipticals and spirals. There are 16 Messier objects. It is considered a galaxy-poor cluster. There is a surrounding Virgo SuperCluster and our Local Group is on the edge of that. Distribution of spirals form an oblate spheroid pointed toward the Milky Way. Distances are estimated by Surface Brightness Fluctuation. Distant galaxies look less bumpy. M100 is a target for HST looking for Cepheid variables. The cluster straddles the Coma/Virgo line. It is midway from Vindematrix to Denebola. In 1961 B.E. Markarian published about NGC 4374, 4406, 4435, 4438, 4458, 4461, 4473, 4477. "... the chain of galaxies ... is not a chance grouping. There is confirmation in a 2008 NAOA article, "Big Galaxy Collisions Can Stunt Star Formation." Hydrogen alpha clouds stretch between. M84 and M86 are the brightest, 10th magnitude eyes. NGC 4438 appears disrupted by tidal interaction. Near the chain, NGC 4305 has very symmetrical spiral arms. NGC 4216 is flanked by two other edge-on galaxies. M99 is a face-on spiral with star formation in the arms appearing bright blue in the palette. M98 and M100 are nearby. Diffuse M85 and spiral 4450 are

north. Near Markarian's chain is M87 which is considered the Virgo Cluster Center of Mass. HST imaged a jet from its nucleus. The galaxy is 9th magnitude. North is M88 with multiple spiral arms, and next M91 a barred spiral. M90 is oblique. M89 is a 10th magnitude elliptical. NGC 4568 and 4567 are colliding spirals. North is M58 with faint spiral arms. M59 and M60 are adjacent ellipticals. M60 overlaps NGC 4647 and they do not appear to overlap. South to M49: M49 is a mag 8.4 elliptical so stands out from its dimmer surroundings. NGC4410 shows tidal connections. A pair of twin face-on spirals are NGC 4411 A and B. Mag 11 4469 is next, and then mag 12 NGC 4488. Little NGC 4519 is mag 12.5, 3 arc minutes and has asymmetrical spiral arms. IC 3438, NGC 4535, NGC 4526 round out the region and M61 is to the South. Rogelo Andreo achieved an APOD 2011 pick with his Virgo Cluster Deep Widefield Mosaic. Tom has created a viewer for SDSS images available on the club website. His other recommended web links follow.

From Mike Prochoda: Texas Star Party 2012 Report

Texas Star Party 2012 will go down in the books as one of the best ever! I made the journey down to TSP with Bernie Poskus and Rick Angell in Rick's SUV, hauling a trailer with our three dogs and all of our gear. We arrived on Saturday afternoon, April 14th, and spent the night at the Prude Ranch as guests prior to the official start of TSP on Sunday. Saturday night was clear and cool, but we could not set up our scopes until Sunday per the official rules. We ended up doing some binocular observing with many wonderful binocular objects seen under dark pristine skies. Late Sunday morning, once the TSP staff officially opened the gates, we set up our scopes on the upper observing field with excellent views for 360 degrees, especially favoring the Southern horizon where much of my personal favorite observing fare lurked low on that horizon (Centaurus A, Omega Centauri, open clusters in Puppis, Carina, and Vela, etc.).

EVERY NIGHT so far has been clear and dark and most of the TSP attendees are now stumbling about in a zombie-like state during the days, due to sleep deprivation (but in a truly happy zombie-like state). Personally, I spent the first 4 nights mostly hunting down faint Spring galaxies including multiple Hickson and Abell galaxy clusters, but I also spent some time marveling at many of my old favorite "eye candy" objects with my Obsession 18" dob. Last night (Thursday night) I decided to do a mini Messier marathon part way through the evening, and managed to get through 98 of the Messier objects before dawn (ending with M30 when it was well above the horizon). All of the Messier's appeared better than I can remember in all of my years of observing.

Alas, we need to leave early tomorrow morning (Saturday) before the official end of TSP on Sunday morning, so we have already packed up our scopes this morning. However, I'm planning on doing some early evening binocular observing tonight before going to bed early for the long journey home on Saturday. I wish the best for those observers remaining at TSP until the very end, and for those of you back in Colorado

observing on the Eastern plains this weekend. The TSP forecasts predict clear skies for the next two nights, so it looks like TSP 2012 will have been clear every single night of the entire star party! I hope to see some of you under the dark skies of Colorado soon.

Cheers and Clear Skies,
- Mike Prochoda (Estes Park)

Owl Hollow, Pawnee National Grasslands, Observing Apr 20-22

From Rob Grover:

Apr 22: Saturday night at Owl Hollow was a mixed bag. Average transparency, mixed with clouds rolling through off & on most of the night. Had some great looks at many of the brighter targets in spite of the sky conditions. M42 is about done for the year, but Venus actually looked pretty good. Saturn & Mars also showed well at various times during the night.

NGC4565 & M13 through David D's 16 looked spectacular when conditions allowed. Interesting photo opportunities, but I never bothered setting up for any deep sky imaging. Sunset was spectacular.

Around 3:00AM, the sky cleared nicely. Thanks to Robert A for being the 'sacrificial astronomer'. I spent about 20 minutes in the car warming up & putting together a fun observing list. With the Milky Way rising nicely, Scorpius (relatively) high and that section of sky clearing & sharpening up, I started going after open clusters starting in Scorpius and running through Cygnus. Some absolutely stunning sights. M6, M7, M8 (cluster NGC6530), M21, M24, IC4766, M11, M29 and M39 all exhibited beautiful colors and patterns.

Checked out the Double Double in Lyra and had a brainstorm. Another quick trip to the car for a warming session and putting together another observing list. This time, I ran through a bunch of double stars. Beginning in Cygnus and kicking off with Alberio, I then collected Al Fawaris, Mu Cygni, 16 Cygni, Omicron Cygni, 61 Cygni and Gamma2 Delphini (enjoyed this one a lot).

Hercules was transiting the Meridian and I slewed up to see what doubles were there. Alpha Herculis (Rasalgethi), Kappa Herculis (Marsic), Delta Herculis (Sarin), Rho Herculis, 95 Herculis (beautiful, with great color contrast) and 100 Herculis were fantastic sights. Had to do a meridian flip for Kappa Herculis. That was the only time I had to move my chair more than a few inches between targets. Amazing how many targets you can get through, and even spend some time on, using Sky Safari, Sky-fi, a well calibrated go-to mount and using only two eyepieces.

While I was observing the doubles, David D came over and said the Veil was popping. Ventured over to his scope and had a truly amazing view. Nearly Fox Park quality. Using an

OIII filter, I slowly scanned around the perimeter, and was treated to some very fine curtains hanging off the Eastern veil. Around to Pickering's and the fine, wispy details absolutely glowed. The Witch's Broom looked about as good as I've ever seen it, again giving up tons of detail. We then hopped over to NGC6888, the Crescent Nebula. More excellent detail and the edge was well defined around the entire perimeter – even the much fainter eastern edge.

What could have been an iffy night turned out wonderful. The Lyrid meteors looked great. I saw 20 through the night. Some were quite bright, leaving long trails. With the variable sky conditions, I left the camera packed up for most of the night. Got it out to take some sky shots of the clouds and my scope. Included a few as attachments.

Thanks to David D, Finn (Steve L) and Dave K for all the fantastic views through their scopes. Makes being temporarily 'aperture challenged' much more bearable!

Apr 23: Actually made it out for three consecutive nights over the new moon. Of the three, the sky conditions last night (Sunday) were by far the best. Transparency still a little soft, but more consistent from dusk until I left around 2:30AM.

Small group Sunday. John F. was still there from Saturday. Gary G was set up by the time I arrived around 6PM. Nice to see Gary and Carol again.

Took some sunset photos – attached one. Beautiful place to catch a setting sun, especially with a small, distant cloud bank to create colors, rays & general visual interest. Was helping GG get his scope collimated while the glorious thin crescent moon with its amazing earthshine put on a glorious show. Craters easily visible in the earthshine through the 30 & the major Maria were naked eye. Jupiter even visible right on the horizon.

Spent some time borrowing photons from Gary. He got the Sky Commander set up and cruised around the sky a bit to make sure it was well aligned. M51 showed fine detail, M3 – a stunning ball of stars, M63 & M64 – Black eye & Sunflower galaxies in great position. NGC4565 filled the eyepiece and the dust lane looked fantastic. M104 Sombrero made me feel like doing a Hat Dance – until I remembered I was a few steps up a ladder . . .

Back to my scope around 10:30. Did an alignment (Actually on Polaris instead of Kochab tonight!) John F, Robert A and I all made the same polar alignment mistake Saturday. Surprisingly, Kochab was the first bright northern star visible Saturday. We all set our mounts on that instead of Polaris. Same elevation, just a bit to the east. I knew something was amiss when I was doing the first alignment star & was several degrees too far west of Sirius. Finished the 3 star alignment (which failed, of course). Tried a second time with the same result. About that time, Polaris was visible and I realized my mistake. Nice to know I wasn't the only one who made the mistake! Was feeling a bit chagrined about it until I talked to

Robert A, and he said he did the same thing. Then, last night, talking to John, he admitted to making the same mistake! Unfortunately, the weight of John's equipment requires him to mostly disassemble in order to move his mount. Bigger issue for him.

On to the observing report.

Had my refractor out for another round of open cluster and double star observing. Started going through my list at 10:30PM, so some of the targets I had selected were either too low on the western horizon or had already set. M36 Pinwheel Cluster and M37 in Auriga still high enough to sparkle nicely. NGC2244, in the Rosette Nebula nice, but better on Saturday, when it was high enough to see some mottling from the nebula – too low to see that on Sunday. NGC2264, Christmas Tree, well positioned & really looked like a tree with the trunk at the bottom. Again fairly low, and couldn't see any accompanying nebulosity from the Cone Nebula. Had M41, 46, 47, 48 & 93 on the list, but was too late to get to them. M44, Beehive & M67 nice & high – still a little in the Front Range light dome, but not heavily influenced. Particularly nice view of M44 – always one of my favorites.

Since I covered many of the open clusters in the eastern sky the previous night, I moved on to the double stars. Had varied success splitting some of the tighter ones. Any with a separation over 2.5" were doable. Any under 2" eluded me. Average seeing combined with rapidly tiring eyes makes it quite an observing challenge. Only my second night pursuing doubles with more than a passing curiosity, and finding it surprisingly rewarding. Sunday's doubles I tried or succeeded in splitting: Polaris, Capella, Mekkuda, Castor, Pollux, Procyon, Tegmine, Regulus, Algieba, Alula Australis, Porrima, Cor Caroli, Mizar, Spica, Zeta Bootis, Izar, XI Bootis and Zeta 1 Coronae Borealis.

Also took a peek at Mars & Saturn when I was in that part of the sky. Saturn was particularly nice. Near zenith and caught it under some fairly steady air. Moons sparkling around the planet, some color variation in the cloud bands and the Cassini division showed for several seconds at a time. Best look at Saturn I've had since last summer @ Red Feather Lakes. Used the 4mm Plossl for planets and many of the doubles. With my scope, that gives a decent 178.5x but limits the exit pupil to 0.57mm. Great on bright objects, as the small exit pupil dims things down a bit. It really is a better wide-field refractor. Mars is getting pretty small for that scope. I could make out some variation in surface color – but not well enough to have any idea of what area I was looking at.

Now, approaching 1:30AM and the eyes were getting weary. Shut down my scope & headed over to talk with Gary & alleviate some aperture fever. Leo Triplet, M13, M27, M57 & NGC6888 were the highlights, but my memory on the other targets we observed is shaky at best. Decided the Veil was still a bit too low to get a good look. Definitely time to head for home and sleep!

Seeing so many targets in one long weekend wouldn't have been possible without running Sky Safari & Sky-Fi. Thanks to Bill T for putting together such a fantastic, useful app! Liked it on the iPod but love it on the iPad. The telescope controls are actually usable for me with the much larger screen. Greatly increased my productive observing time.

Robert Grover

From Bob Michael: Check This Out: California Meteorite Peppers Sutter's Mill Region

[Rush on to find fragments of California meteor – This Just In - CNN.com Blogs](#)

From Robert Arn: Owl Hollow Images and Cityscape Moonrise

Here are a couple more images from Owl Hollow this past Saturday.

Owl Hollow Sunset:

<http://www.astroarn.com/p151520620/h31fdca99#h31fdca99>

Crepuscular Rays at Owl Hollow:

<http://www.astroarn.com/p151520620/h31fdca99#h1388cca1>

Here is a newly processed image from earlier in the month. Don't forget the "supermoon", or the largest moon of 2012, occurs this Saturday.

<http://www.astroarn.com/night scape/h39af2a34#h39af2a34>

Annular Solar Eclipse May 20

Best Looks

Moon	By Mars May 1 and 28; by Saturn, Spica May 1, 31 Year's largest Full Moon May 5; By Venus May 22
Mercury	Hidden in glare
Venus	Bright in W evenings all month
Mars	High in S early evening
Jupiter	In E at dawn
Saturn	In S middle of night



April 22 Owl Hollow Sunset by Rob Grover



April 21 Scope looking East, Rob Grover

International Space Station Passes for Loveland – Fort Collins

May 2012

Check passes after May 4, ISS is to be boosted

Date	Local Time	Intensity (Mag)	Alt.	Azimuth	Distance to flare centre	Intensity at flare centre (Mag.)	Satellite
02 May	21:00:49	-2	61°	89° (E)	18.9 km (W)	-8	Iridium 32
03 May	03:59:04	-0	12°	95° (E)	186.4 km (W)	-6	Iridium 68
03 May	20:54:48	-1	59°	89° (E)	33.5 km (E)	-8	Iridium 58
03 May	22:29:58	-2	30°	61° (ENE)	34.1 km (W)	-7	Iridium 8
04 May	03:52:52	-6	11°	96° (E)	7.3 km (W)	-6	Iridium 75
04 May	04:00:54	-1	46°	262° (W)	32.7 km (W)	-8	Iridium 43
04 May	22:23:57	-2	29°	62° (ENE)	32.4 km (E)	-7	Iridium 61
05 May	02:43:39	-3	12°	302° (WNW)	48.3 km (W)	-6	Iridium 54
05 May	03:46:43	-1	11°	98° (E)	142.4 km (E)	-6	Iridium 63
05 May	03:54:48	-7	46°	264° (W)	6.7 km (W)	-8	Iridium 40
05 May	03:55:52	-4	14°	99° (E)	45.2 km (W)	-6	Iridium 64
06 May	02:37:22	-4	12°	304° (NW)	27.9 km (E)	-6	Iridium 83
06 May	03:48:39	-3	47°	266° (W)	20.1 km (E)	-8	Iridium 77
06 May	03:49:41	-2	13°	101° (E)	79.8 km (E)	-6	Iridium 67
06 May	03:58:55	-1	17°	102° (ESE)	106.0 km (W)	-6	Iridium 68
06 May	22:21:09	-1	35°	64° (ENE)	41.9 km (W)	-8	Iridium 7
07 May	02:31:13	-0	12°	306° (NW)	109.5 km (E)	-6	Iridium 56
07 May	03:52:44	-6	16°	103° (ESE)	6.5 km (E)	-6	Iridium 75
07 May	22:15:06	-6	35°	64° (ENE)	9.0 km (E)	-8	Iridium 37
08 May	03:42:17	-5	44°	269° (W)	11.0 km (W)	-8	Iridium 98
08 May	03:46:31	-1	16°	105° (ESE)	105.1 km (E)	-6	Iridium 63
08 May	03:55:49	-1	20°	106° (ESE)	90.0 km (W)	-6	Iridium 64
08 May	20:33:47	-1	70°	97° (E)	26.4 km (W)	-9	Iridium 29
08 May	22:09:08	-0	35°	65° (ENE)	54.8 km (E)	-8	Iridium 34
09 May	03:39:27	-0	40°	271° (W)	51.0 km (W)	-8	Iridium 80
09 May	03:49:40	-6	19°	108° (ESE)	2.9 km (W)	-6	Iridium 67