

The Objective View April 2001
Newsletter of the Northern Colorado Astronomical Society

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Meetings first Thursday of each Month

Next Meeting:
April 5 7:30 PM
High Altitude Ballooning
Bill Beach, Edge of Space Sciences
www.coss.org

Meeting Directions
Discovery Center Science Museum
703 E Prospect Rd, Fort Collins
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 its NE corner. From I-25, take Exit 268, West to Lemay Ave, continue West 1/2 mile, see Discovery Center on the left.

Starwatch at at Discovery Center
Scopes are appreciated at monthly evening starwatches. Set up in the South parking lot on the Friday nights near 1st quarter Moon. Contact Dan Laszlo if you can come, 498-9226, djlaszlo@aol.com. Weather cancellations will be posted at 472-3990. Events to come:
April 27 8 PM
May 25 8:30 PM

NCAS Star Party Dates April 13, 14, 20, 21
Cactus Flats site is on undeveloped parcel of prairie about 6 miles west of Briggsdale. Take Colo Highway 14 East from I-25 (Exit 269). From there about 19 miles east to Ault. Continue 18 miles East of Ault, at County Rd 65 (milepost 170), turn North, go one mile. Site is through the gate on the right (no road), close gate and set up. Beware of the cactus! Our standard nights are the weekend of the New Moon, sometimes a weekend before and after. If the weather is bad on a Friday night we will try the following night. The site is now offically wheelchair accessible, but there are no facilities so bring essentials.

Call Tom Teters, tom@ezlink.com, with questions about the star party status, site or dates, 482-5702 or 482-0807.

N.C.A.S. Invitaional Star Party- May 17-19, 2001
This will be the First Star Party of the 2001 season to be held in the M.A.R.S. area. It will be held at Virginia Dale, Colorado (Two Chicks Paintball), just South of the Wyoming border on Hwy 287. This is 40 miles north from the 'Y' in N. Ft. Collins, Colorado and approximately 28 miles South of Laramie, Wyoming at an elevation of 7560'. More to come from Tom T.

Rocky Mountain National Park Summer Starwatching
Contact Dan Laszlo if you can volunteer with a scope this summer. Dates are June 15, June 29, July 13, July 27, August 10, August 24.

Other Events
Little Thompson Observatory Star Night, Berthoud 7 p.m.
Dan Laszlo Martian Mysteries
April 20 <http://www.starkids.org>

Cheyenne Astronomical Society
<http://users.sisna.com/mcurran>
Bruce Bookout Planetary Defense
April 20 7 p.m.

Open House, Chamberlain Observatory, dusk to 10 PM
<http://www.du.edu/~rstencil/Chamberlin/>
April 28 303 871 5172

Longmont Astronomical Society 7PM
<http://laps.fsl.noaa.gov/cgi/las.cgi>
April 19 NOAA Space Environment Center/Forecast Systems Lab

Sterling Star Party, North Sterling Reservoir State Park
April 21-22, see
<http://laps.fsl.noaa.gov/albers/las/sterling.html>

March 1 Meeting: Telescope Building Randy Cunningham, Astrosystems

Randy offers the Telekit as an antidote for aperture fever. Builders need to begin with their choice of primary mirror size, which can be accommodated up to 32". Randy advises placing an order for optics with one of five suppliers: Galaxy, Intermountain Optics, Nova, Pegasus, or Steve Swayze. The delivery time for the mirror will allow assembly of the hardware components of the scope. He has copies of the Windows shareware program "Newt" by Dale Keller. It accepts data on the optics, and calculates telescope performance parameters. Sometimes the secondary mirror size is subject to discretion, and he tends to advise planetary observers to install smaller secondaries, if they wish to minimize diffraction effects. There is no benefit to making a secondary minor axis less than 15% of the primary diameter. At 20%, consequences of diffraction can emerge, and at over 25%, there is noticeable impact from diffraction. Deep sky observers are steered toward larger secondaries to maximize field illumination at low power. Secondary offset is a common topic of debate. It is important for photography for symmetrical field illumination. The uneven field illumination which results from a centered secondary is not visually detectable, and collimation is easier with a centered secondary. Offset for a 10" f/5 scope is only 0.05 inch, not worth attempting since it is hard to adjust to that tolerance. Very large primaries, or very low f ratios at f/3.5 or f/4 deserve attention to secondary offset. Multilayer mirror coatings which promise 96% reflectivity are composed of 15 to 25 components, 2 to 3 atoms thick. Cost and difficulty in application rapidly rise with mirror size. Randy recommends enhanced coatings on the secondary and regular coatings on the primary as a most cost-effective solution. Some high-reflectivity coatings are prone to scatter, which can reduce visibility of low contrast detail. Randy recommends consideration of the user's maximally dilated pupil size, in consideration of the lowest magnification eyepiece which utilizes the full aperture of the mirror. The exit pupil size for an eyepiece is equal to the diameter of the primary, divided by the magnification of a given telescope + eyepiece combination. A larger exit pupil than the eye can accommodate, a common result of very low power, can be viewed as wasting aperture. For some large objects, very low power can give an appealing view, and the loss of aperture is inconsequential. Another issue with an exit pupil greater than the eye pupil is the secondary mirror shadow. It becomes a greater distraction, particularly when the iris is constricted for bright objects. The Sky & Telescope pupil gauge is inexpensive and easy to use. Randy recommends aiming for magnification steps in which power is doubled. A high quality Barlow lens is recommended to produce an additional power with a given eyepiece, and give high powers with comfortable, relatively long-eye relief eyepieces. Eyepiece considerations include local air transparency, steadiness. The

observer's eye can suffer astigmatism which is less obvious with small exit pupils, or floaters which are worse with small exit pupils. Experienced observers may be more finicky about eyepiece flaws like chromatic aberration, scatter and astigmatism. Eyepiece apparent field can be limited without hampering planet observers, but deep sky observers and those with undriven scopes appreciate wide fields. Scopes with large f/ ratios are forgiving, and work well with a variety of eyepieces, but short f/ ratios demand the best eyepieces for optimum wide-field views. Eyepiece cost tends to reflect quality of construction, coatings, apparent field of view, design complexity, and eye relief. However, relative bargains can be found, if the observer is willing to compromise some features. Randy recommends coma correctors for typical Telekits, and finds his eye is more relaxed by using a unit such as a Paracorr. Note that the NCAS club 10" is an early model Telekit. For the latest Astrosystems offerings in telescope components and accessories, request a catalog from: Astrosystems, Inc. 124 N Second St, LaSalle CO 80645, phone 970 284 9471, fax 284 9473, or see: <http://www.ezlink.com/~astrosys/>

NCAS Business for March 1

President Jan Kok called the meeting to order. The club had a consensus to find an 18mm eyepiece, barlow, nebula filter and binoculars. An equipment committee of Dave Chamness and Dan Laszlo was appointed, to develop specific recommendations for these items. The shielded lighting bill passed the Colorado Senate 52-9. Tom Teters reported that space musician Steve Weisman has been recruited for the NCAS Star Party in May, see stevenweisman@ezlink.com. Sponsors are being approached for door prizes. Tom has received an offer of a site at Carter Lake for a roll-off observatory. Marty Tippmann has offered, minus optics, a 16" telescope tube assembly and mount. The International Dark Sky Association meeting in Tucson March 8 was announced.

Software For Sale SkyMap Pro version 4. \$25

By Chris Marriot of the UK. Includes printed manual. Current version is Seven which goes for \$95 these days. Randy Moench, 7348 Poudre Canyon Hwy, Bellvue CO 970-491-8429

4.5 inch mirror blanks, S&T Magazines available.

The blanks are approximately 4.5 inches in diameter and 1/2 inch thick. I have approximately a dozen of them, and various grinding powders. These blanks would be great for kids since the glass is relatively soft and grinds fast. Sky and Telescope with some issues from the 60's. I'm just trying to find a useful home for this stuff. It's free for the taking. I live west of Boulder and I'm looking for someone close by or is willing to pay UPS shipping.

Chet Kieffer ckieffer@indra.com

Best Looks

Moon By Saturn & Jupiter 4/25,26
by Mars 4/ 13
Mercury In W, eves, last few days
Venus In predawn E sky
Mars Marked brightening by end, highest
predawn
Jupiter & Saturn High in W at dusk

Comet Linear C/2001 A2 in Outburst

Look for the Comet at about 7-8th magnitude in Monoceros.
It may fade rapidly. From Sky & Telescope's Roger Sinnott:
The ephemeris below, calculated at Sky & Telescope from
Marsden's elements in MPC 42316, gives the comet's position
at 0h Universal Time on each day for the next several weeks.
Also given are its distances from the Earth (Delta) and Sun
(r) in astronomical units, elongation angle from the Sun,
approximate
magnitude, and constellation.

2001 0h UT	R.A.(2000) h m o '	Dec. o ' "	Delta a.u.	r a.u.	Elong. o (°)	Mag.	Const.
Mar 30	6 04.4	-06 12	0.942	1.286	83.0	8.0	Mon
Mar 31	6 03.8	-06 28	0.940	1.273	82.0		Mon
Apr 1	6 03.2	-06 44	0.938	1.259	81.0	7.9	Mon
Apr 2	6 02.6	-07 00	0.936	1.246	80.1		Mon
Apr 3	6 02.1	-07 17	0.934	1.233	79.1	7.8	Mon
Apr 4	6 01.6	-07 33	0.932	1.219	78.2		Mon
Apr 5	6 01.1	-07 50	0.929	1.206	77.3	7.7	Mon
Apr 6	6 00.7	-08 07	0.927	1.193	76.4		Mon
Apr 7	6 00.3	-08 24	0.924	1.180	75.5	7.5	Mon
Apr 8	5 59.9	-08 41	0.921	1.167	74.6		Mon
Apr 9	5 59.5	-08 58	0.918	1.154	73.8	7.4	Mon
Apr 10	5 59.2	-09 15	0.915	1.141	72.9		Mon
Apr 11	5 58.8	-09 33	0.911	1.128	72.1	7.3	Mon
Apr 12	5 58.5	-09 51	0.908	1.116	71.3		Mon
Apr 13	5 58.2	-10 09	0.904	1.103	70.5	7.2	Mon
Apr 14	5 58.0	-10 27	0.900	1.091	69.7		Mon
Apr 15	5 57.7	-10 46	0.895	1.078	68.9	7.1	Mon
Apr 16	5 57.4	-11 05	0.891	1.066	68.2		Lep
Apr 17	5 57.2	-11 24	0.886	1.054	67.4	7.0	Lep
Apr 18	5 56.9	-11 43	0.882	1.042	66.7		Lep
Apr 19	5 56.7	-12 02	0.876	1.030	66.0	6.8	Lep
Apr 20	5 56.5	-12 22	0.871	1.018	65.3		Lep

From:

Dan Laszlo
2001 S Shields St Building H
Fort Collins CO 80525

TO:

International Space Station passes for Fort Collins-Loveland

Date	Mag	Starts		Max. Altitude			Ends				
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.	
04 Apr	1.0	20:15:27		10	S	20:17:40	18	SE	20:18:38	16	ESE
05 Apr	-0.8	20:50:02		10	SW	20:53:09	76	SE	20:54:24	33	ENE
06 Apr	1.2	21:25:56		10	W	21:28:45	30	NNW	21:29:35	26	N
07 Apr	-0.2	20:24:58		10	WSW	20:28:05	63	NNW	20:31:10	10	NE
07 Apr	2.4	22:02:29		10	NW	22:04:14	15	NNW	22:04:14	15	NNW
08 Apr	1.8	21:00:50		10	WNW	21:03:21	22	NNW	21:05:55	10	NNE
09 Apr	0.8	19:59:16		10	WSW	20:02:12	39	NNW	20:05:10	10	NE
10 Apr	2.1	20:35:01		10	WNW	20:37:13	17	NNW	20:39:24	10	NNE
15 Apr	1.7	21:51:09		10	NNW	21:52:53	19	N	21:52:53	19	N
16 Apr	1.9	20:49:08		10	NNW	20:50:50	14	NNE	20:52:32	10	NE
16 Apr	2.5	22:24:11		10	NW	22:24:54	16	NW	22:24:54	16	NW
17 Apr	1.0	21:21:51		10	NNW	21:24:29	25	NNE	21:24:46	25	NE
18 Apr	1.7	20:19:26		10	NNW	20:21:27	16	NNE	20:23:27	10	ENE
18 Apr	1.0	21:54:34		10	NW	21:56:26	34	NW	21:56:26	34	NW
19 Apr	0.4	20:51:47		10	NW	20:54:35	33	NNE	20:55:59	21	ENE
20 Apr	-0.7	21:24:12		10	WNW	21:27:14	68	SW	21:27:20	67	SSW
21 Apr	-0.1	20:20:56		10	NW	20:23:52	46	NNE	20:26:37	11	ESE
21 Apr	1.9	21:57:19		10	W	21:58:33	15	WSW	21:58:33	15	WSW
22 Apr	0.1	20:53:07		10	WNW	20:56:03	43	SW	20:57:42	20	S
24 Apr	0.9	20:21:18		10	WNW	20:23:55	28	SW	20:26:35	10	SSE

