

The Objective View

June 2004

Newsletter of the Northern Colorado Astronomical Society

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<http://www.starkids.org>

Cheyenne Astronomical Society, Cheyenne Botanical Garden
June 18 7 pm

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

Open House, Chamberlain Observatory, dusk to 10 pm

Jun 26, Jul 24, Aug 21, Sep 18 303 871 5172

<http://www.du.edu/~rstencil/Chamberlain/>

Longmont Astronomical Society

June 17 7 pm Longmont Christian School, 550 Coffman St

<http://longmontastro.org/>

Global Net of Astronomical Telescopes Needs You

Dr. Culver has short-period variable star candidates which need monitoring. If you can contribute CCD images of selected 15th to 18th magnitude stars, please call Dr. Culver in the Physics Dept, CSU, 491-6206 for more information.

Next Meeting: June 3 7:30 PM

The Mystery of High Energy Cosmic Rays: The Pierre Auger Observatory

Dr. Pablo Bauleo
CSU Associate Astronomer

NCAS Business at 7 PM

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.

Rocky Mountain National Park Starwatching 2004

A spring date, April 16, will be tried this month.

Site is the end of the Upper Beaver Meadows road, starting at dusk. Ranger Jeff Maugans plans to add New Moon weekends. Summer 2004 dates: June 11, 18, 25. July 9, 16, 23. August 6, 13, 20. Contact Dan Laszlo if you are interested as a volunteer, djlaszlo@aol.com, 970 498 9226.

NCAS Dark Sky Star Party Dates

June 11, 12, 18, 19

Cactus Flats site is on undeveloped parcel of prairie about 6 miles West of Briggsdale. Take Colo Hwy 14 East from I-25 (Exit 269). Go 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 wire gate on the right, no road, close gate and set up. Beware of the cactus. The site is now officially wheelchair accessible, but there are no facilities so bring essentials. Call **Tom Teters**, tomt@starmon.com, with questions about star party status or dates, 482-5702.

Other Events

Little Thompson Observatory Star Night, Berthoud
June 18 Star Night

About Our June 3 Speaker

From Pablo Bauleo:

At 17 years old I was selected by the Argentinean Atomic Energy Commission for special training in the Physics Department to perform technical work on the Heavy Ion Particle Accelerator (the largest one in South America and the fourth world-wide) and research on atomic and nuclear physics.

By the age of 23 I swapped from Nuclear Physics to Astrophysics group (within the Atomic Energy Commission) and by the age of 24 I got my "Licenciatura" degree (master-like) from Buenos Aires University.

I got my Ph.D by the age of 29 from Buenos Aires University for my research work for the Pierre Auger Observatory and the small cosmic ray array "TANGO" built in Buenos Aires.

Currently I'm a Research Associate at CSU-Physics Department, working on the Pierre Auger Observatory (Argentina) and in the proposed Northern Hemisphere Site for the Pierre Auger Observatory (Lamar, Colorado)

I have done research on Charged Cosmic Ray physics (Italy, Argentina, USA) Neutrino Astrophysics (instrumentation for AMANDA Experiment, Stockholm University), Atmospheric Monitoring Systems (Slovenia).

Teaching positions

Universidad de Buenos Aires

Universidad de San Martin (Argentina)

Research positions:

Physics Department, Atomic Energy Commission (Argentina, 1991-2001)

Physics Department, CSU (2001-currently)

Visiting researcher of

Universita di Torino (Turin, Italy) -> Cosmic Rays

Politehnika (Nova Gorica, Slovenia) -> Atmospheric monitoring systems (to be used both in Environmental Science and Astrophysics)

Stockholm Universitet (Stockholm Sweden) -> Instrumentation for AMANDA/IceCube detector located at the South Pole

May 6 Program

Launch of the Spitzer Space Telescope, Aug 25 2003

Dr. Andrea Schweitzer

An invitation to the Spitzer Space Telescope launch came to her because of her contract work for NASA. She was able to tour Kennedy Space Center at the Cape, and watched the launch with the science team. She encouraged members to see a launch, and noted that there are several fun family destinations in Central Florida, alternatives if a launch is delayed. The infrared telescope was the last of the great space telescopes to launch. The IR band from 3 to 180 microns is invisible, and is absorbed heavily by the atmosphere. The telescope required a Delta heavy launch rocket. She was able to see the telescope under construction at Ball Aerospace. A low-Earth orbit would not work, because heat from the Earth would swamp the IR signal. The craft was placed in a heliocentric orbit trailing the Earth. It is about 1 million miles trailing Earth, and no servicing is possible. KSC is an easy drive from Orlando. Local cafes and motels play to space themes. Cape Canaveral performs about 1 launch per week. There is a rocket collection including a Saturn V. You can catch a lecture by an astronaut, but do not feed the alligators. The memorial for fallen astronauts is nearby. On days without launches, access is available to great nearby beaches. Birdwatchers should easily find egrets and cormorants at the Merritt Island National Wildlife Refuge. The rivers are home to manatees. Rocket propellant has not created problems there. Tours are available. The Delta launch was scheduled at night. The massive rocket rose slowly at first, then accelerated out of sight within 90 seconds. Andrea took advice to view the rocket directly, and did not attempt photos. The telescope was deployed successfully, and has started exploring the IR spectrum from 3 to 180 microns with imaging and photometry, spectroscopy from 5-40 microns, and spectrophotometry from 50-100 microns. It was named for Lyman Spitzer, an advocate for the first space telescope. The family who proposed the winning name attended the launch. Resolution will be 10 times better than Earth-based instruments, about 1 arcsecond at best. It is diffraction limited at 6.5 microns. Aperture is 85 cm. The f/12 beryllium mirror is cooled to 5.5 K, an innovation. Ninety-five gallons of liquid helium provide cooling. The telescope is designed to run for 2.5 to 5 years, and will be limited by the coolant supply. The detectors are a new generation of large format detectors. The first images released included a four-color composite of M81. It reveals the distribution of dust grains in the galaxy. Bright knots at 8 microns highlight active star formation. The image of Henize 206 in the Large Magellanic Cloud shows a shock wave secondary to a supernova explosion. It is triggering star formation. The LMC is low in heavy metal

elements, so it is used as a model of the earlier conditions in the universe. The Tarantula Nebula is also in the LMC, and Spitzer images penetrate the dusty nebula. It is the nearest example of the starburst phenomenon. Clues to the composition of the clouds have been obtained by Spitzer. Images and illustrative movies are available via the Internet.

For more information see:

<http://www.spitzer.caltech.edu>

NCAS Business, May 6 2003

President Dan Laszlo called the meeting to order. Brad Jarvis announced the upcoming Mars Society meeting, on the June 8 Venus transit. Nate Perkins gave the treasurer's report. Andrea Schweitzer requested NCAS support with a NASA Project ASTRO grant, linking amateurs and teachers in grades 4-8. She requested help for remodeling at Little Thompson Observatory.

Dan Laszlo announced dates for Rocky Mountain National Park.

Binoculars for Sale

11x80 binoculars in excellent condition, with caps and case. \$145. Contact REScline@aol.com

URL for Clear Sky Clocks for Colorado

http://cleardarksky.com/csk/prov/Colorado_clocks.shtml

Best Looks

Moon	By Saturn 6/19
	By Mars 6/20
	By Jupiter 6/23
Mercury	Very low in East at dawn, midmonth
Venus	After transit, low in E at dawn
Mars	Low in W evenings
Jupiter	High in S evenings
Saturn	Low in W evenings

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

TO:

International Space Station Passes for Loveland – Fort Collins
 Generated at www.heavens-above.com

June 2004

Date	Mag	Starts		Max. Altitude		Ends	
		Time	Alt Az.	Time	Alt Az.	Time	Alt Az.
27 May	0.2	21:41:58	10 NW	21:44:50	41 NNE	21:46:23	22 E
27 May	2.3	23:18:03	10 W	23:18:11	11 W	23:18:11	11 W
28 May	-0.4	22:12:01	10 WNW	22:14:57	51 SW	22:15:11	49 SSW
29 May	-0.3	21:06:32	10 NW	21:09:29	54 NNE	21:12:12	12 ESE
29 May	1.9	22:43:09	10 W	22:44:00	13 WSW	22:44:00	13 WSW
30 May	0.3	21:36:41	10 WNW	21:39:26	36 SW	21:41:03	20 SSE
01 Jun	0.9	21:01:17	10 WNW	21:03:54	27 SW	21:06:29	10 SSE
22 Jun	2.0	04:19:56	10 SSE	04:21:17	12 SE	04:22:38	10 ESE
23 Jun	-0.0	04:47:29	10 SSW	04:50:23	45 SE	04:53:17	10 ENE
24 Jun	1.5	03:43:49	15 SSE	03:44:26	16 SE	03:46:25	10 E
25 Jun	-0.6	04:11:57	24 SW	04:13:32	61 SE	04:16:31	10 ENE
26 Jun	1.4	03:08:14	19 ESE	03:08:14	19 ESE	03:09:51	10 E
26 Jun	0.4	04:40:02	10 W	04:42:52	37 NNW	04:45:42	10 NE

A Few Iridium Flares for Lemay and Trilby, Fort Collins

Date	Time	Mag	Alt	Azimuth	Distance to flare center	Mag at flare center
27 May	22:35:17	-6	11°	276° (W)	33.9 km (W)	-6
28 May	21:39:31	-3	11°	345° (NNW)	35.7 km (W)	-5
28 May	22:29:22	-3	11°	277° (W)	77.9 km (E)	-6
28 May	23:02:04	-6	19°	42° (NE)	11.8 km (W)	-7
29 May	23:30:26	-7	29°	234° (SW)	6.7 km (E)	-7
30 May	02:51:06	-7	30°	291° (WNW)	6.0 km (E)	-7
30 May	04:28:21	-6	60°	261° (W)	6.1 km (W)	-8
31 May	21:10:55	-5	19°	344° (NNW)	11.9 km (E)	-6
31 May	22:53:34	-7	24°	47° (NE)	3.4 km (W)	-7
01 Jun	21:04:41	-4	20°	343° (NNW)	13.7 km (W)	-6
02 Jun	02:41:40	-4	25°	296° (WNW)	23.5 km (W)	-7
02 Jun	23:15:29	-5	27°	242° (WSW)	17.4 km (W)	-7
03 Jun	02:35:31	-3	25°	298° (WNW)	27.3 km (E)	-7