

The Objective View

October 2004

Newsletter of the Northern Colorado Astronomical Society

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Cheyenne Astronomical Society
October 15 7 pm Cheyenne Botanical Garden
<http://home.bresnan.net/~curranm/>

Open House, Chamberlain Observatory, dusk to 10 pm
Oct 16 303 871 5172
<http://www.du.edu/~rstencil/Chamberlain/>

Longmont Astronomical Society
Oct 21 7 pm Longmont Christian School, 550 Coffman St
<http://longmontastro.org/>

Next Meeting: October 7 7:30 PM
Quasar Outflows and their Role in Structure
Formation in the Universe
Dr. Nahum Arav, University of Colorado

About Our Program and Speaker, Dr Arav

PhD, University of Colorado Boulder 1994
1994-1997 Postdoc: Caltech
1997-2002 Research position UC Berkeley:
2002-current, senior scientist, CASA, University of Colorado
Boulder

Abstract:

I will give an overview of Quasars and the powerful outflows that emanate from them. The potential influence of these outflows on structure formation in the universe has recently emerged to the forefront of theoretical cosmological models. I will review the progress made over the last few years in this field and will discuss the ongoing experimental effort to study observed outflows.

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.

NCAS Dark Sky Star Party Dates
October 8, 9, 29, 30

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.

Starwatch at Discovery Science Center

703 E Prospect Ave, Fort Collins
October 22 6:30 pm
October 27 total lunar eclipse, dusk
November 19 6:30 pm
January 14 6:30 pm

Other Events

Little Thompson Observatory Star Night, Berthoud
October 15 Star Night
<http://www.starkids.org>

September 2 Program

Mars Rover Update, by Dr. Steve Lee
Denver Museum of Nature + Science & University of Colo

A vivid high-definition animation showed the steps in delivering the Mars rovers in 2003. They were launched without a hitch, and their entry, descent, and landing systems succeeded. They compensated for a slightly lower atmosphere density on Mars than predicted. High-resolution images are available as stills, and animations have been prepared which illustrate a zoom view to simulate a 10x microscope. Dr. Lee gave nearly daily updates at the Denver Museum as data and images were returned. Clear evidence for water exposure at the surface comes in the form of hematite and sulfate minerals.

The Rovers are now communicating a couple times a day. Time for message travel is 18 minutes with Mars beyond the Sun. Data are relayed by an orbiter. The right front wheel on Spirit was drawing up to 3 times the normal current, and cannot freewheel, so it is dragged by the lander about 90-95 % of the time. It has returned nice vistas from the far wall of Gusev Crater. Winter solstice is near, so the landers have power to run about an hour per day. They seek slopes to improve the angle for solar collectors. Two hours of drilling can consume the day's energy budget. The Meridiani site was found with the TES on Mars Global Surveyor in orbit. It appeared to have a patch of hematite the size of Oklahoma. It is the darkest spot on the planet. The surface is like a parking

lot, so Opportunity scored an interplanetary hole-in-one to roll into a 10 meter crater with an outcrop. The hematite nodules called "blueberries" cover the surface. They formed as concretions within jarosite rock and are weathering out. There are ripple marks in the area, so it is not an ocean bed. Five lines of evidence point to liquid water in the past, how long is not clear. Opportunity rolled to Endurance Crater. Ten meter cliffs there looked like sandstone. In a month it made 6 holes and traveled 8 meters. There is fine-grained rock which was layed down under water. There is a newly found pink rock components called popcorn, the composition is unknown. The crater has fine dunes at the bottom. During southern Winter, the aphelion cloud belt forms. Recently, these high cirrus clouds were imaged from the ground. Transits of Phobos and Deimos, the Martian satellites, were caught. The rovers are still going strong at the solstice in mid-September. Funding was extended, since the program costs \$3 million a month. Cost to get there was \$850 million. In about 240 days on the surface, the rovers returned about 20,000 images, and provided genuine thrills to Mars enthusiasts. We can look forward to the next rover series, which will be about SUV size. They will have a more complete lab and improved range

NCAS Business, September 2 2004

President Dan Laszlo called the meeting to order. The treasurer's report was deferred. Dave Chamness invited volunteers for a public starwatch at Pawnee National Grasslands. Dan Laszlo announced Fall dates for Discovery Science Center starwatching. The TrES-1 parent star charts were explained. Tom Teters alerted members for Comet Macholz. Gerry Reynolds circulated photos of his massive Tesla coil. Lee Gregory successfully tracked down an ISS solar transit with Tom Fly's website.

From Andrea Schweitzer:

SpaceShipOne Wins \$10 Million Ansari X Prize in Historic 2nd Trip to Space

By Leonard David
Senior Space Writer
posted: 04 October 2004
10:56 am ET

Updated 12:08 p.m. ET
MOJAVE, CALIFORNIA . Human flight took a significant step forward today as the privately built SpaceShipOne flew into suborbital space for the second time in five days, securing the \$10 million Ansari X Prize.

http://www.space.com/missionlaunches/xprize2_success_041004.html

A beautiful picture to start off your weekend!
(Also, it was the APOD.)

<http://www.spaceref.com/news/viewpr.html?pid=15005>

From Tom Teters:

News of the Universe Today

Greetings,

I just found this site, looks like a good resource for astro-related news.

<http://www.universetoday.com/index.html>

.....and few ads.

T.C.

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

Total Lunar Eclipse October 27

Penumbral phase starts at 1808, may not be visible until 1845. Umbra seen from 1914 to 2254. Total eclipse from 2023 to 2145.

Best Looks

Moon	By Saturn 10/7 By Regulus & Venus 10/10 By Jupiter 10/12
Mercury	By Sun
Venus	Bright in E predawn By Regulus 1 st week By Jupiter end of month
Mars	Low in ESE at dawn, end of month
Jupiter	Low in E predawn
Saturn	High in E predawn
Uranus	In Aquarius late evening
Neptune	In Capricornus late evening

Orionid meteors October 20-26

Expect at most 15 per hour, in predawn hours.

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

TO:

International Space Station Passes for Loveland-Fort Collins

October 2004

Date	Mag	Starts Time	Alt	Az	Max Altitude Time	Alt	Az	Ends Time	Alt	Az
04 Oct	3.0	19:01:41	10	WSW	19:02:13	10	SW	19:02:44	10	SW
14 Oct	1.8	06:24:11	10	S	06:26:36	22	SE	06:29:02	10	E
16 Oct	1.1	05:48:01	14	SSW	05:50:05	28	SE	05:52:48	10	ENE
17 Oct	-0.8	06:17:11	16	WSW	06:19:30	72	NNW	06:22:32	10	NE
18 Oct	1.2	05:14:20	30	E	05:14:20	30	E	05:16:22	10	ENE
18 Oct	0.6	06:46:31	10	W	06:49:05	25	NNW	06:51:43	10	NNE
19 Oct	-0.4	05:43:06	53	NNW	05:43:06	53	NNW	05:45:52	10	NE
20 Oct	0.9	06:11:42	19	NW	06:12:30	21	NNW	06:14:56	10	NNE
21 Oct	2.2	05:08:25	15	NE	05:08:25	15	NE	05:09:05	10	NE
21 Oct	1.7	06:40:49	10	NW	06:42:18	13	NNW	06:43:47	10	NNE
22 Oct	1.6	05:36:47	16	N	05:36:47	16	N	05:38:02	10	NNE
23 Oct	1.8	06:05:05	12	NNW	06:05:32	12	N	06:06:48	10	NNE
24 Oct	2.0	06:34:51	10	N	06:35:25	10	N	06:35:59	10	NNE
26 Oct	2.1	05:57:51	10	N	05:58:29	10	N	05:59:09	10	NNE
27 Oct	1.9	06:26:34	10	NNW	06:28:13	14	NNE	06:29:53	10	NE
28 Oct	1.1	06:55:12	10	NNW	06:57:46	24	NNE	07:00:19	10	E
29 Oct	1.8	05:50:25	14	N	05:51:05	15	NNE	05:52:56	10	NE
30 Oct	0.9	06:18:33	15	NNW	06:20:29	28	NNE	06:23:12	10	E
31 Oct	2.3	04:14:56	14	NE	04:14:56	14	NE	04:15:51	10	ENE
31 Oct	-0.7	05:46:42	10	NW	05:49:42	87	E	05:52:41	10	SE
01 Nov	0.6	04:43:09	34	NNE	04:43:09	34	NNE	04:45:56	10	E
02 Nov	-0.8	05:11:24	44	WNW	05:12:11	71	SW	05:15:10	10	SE
03 Nov	2.6	04:07:58	14	E	04:07:58	14	E	04:08:30	10	ESE
03 Nov	1.0	05:39:44	15	WSW	05:40:55	18	SW	05:43:05	10	S