The Objective View

May 2007

Newsletter of the Northern Colorado Astronomical Society

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Next Meeting: May 3 7:30 PM

Astrobiology, Science and Religion

Dr. Bruce Jakosky, University of Colorado

Discovery Science Center
703 E Prospect Ave, Fort Collins
Club business at 7:15 pm

Meeting directions:

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. From I-25, take Exit 268, West to Lemay Ave, continue West 1/2 mile, see Discovery Science Center on the left.

NCAS Programs
June 7 Dick Dietz, UNC Solar Eclipses
July 5 Craig DeForest, SWRI Developments, Solar Physics

Space Night
May 17 8:30 pm Kruse Elementary

NCAS Public Starwatch
May 25 8:30 pm Discovery Science Center

Rocky Mountain National Park Starwatch
Dates for 2007 are June 15 & 22; July 6 & 20; Aug 3 & 17. Please email objview at ncastro.org if you can volunteer.

Other Events

Little Thompson Observatory Star Night
May 18 7:30 pm
http://www.starkids.org

CSU Madison Macdonald Observatory Public Nights
On East Drive, north of Pitkin Street
Tuesdays 8 pm if clear, when class is in session

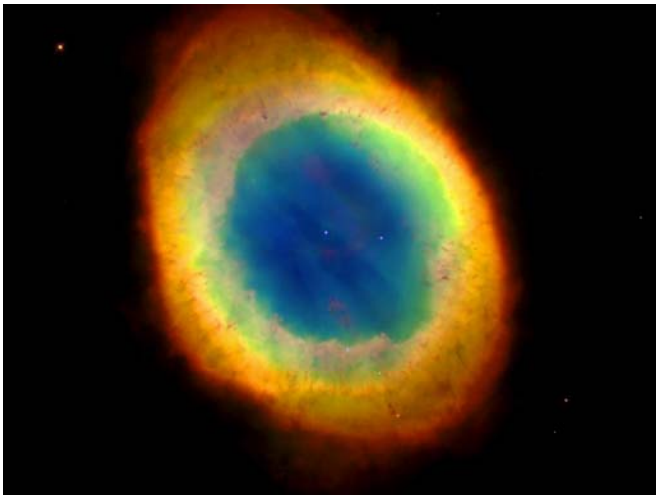
Cheyenne Astronomical Society, Cheyenne Botanical Garden
May 18 8 pm Telescope Workshop
http://home.bresnan.net/%7Ecurranm/index.html

Chamberlin Observatory Open House, dusk to 10 pm
May 26, Jun 23, Jul 21, Aug 18, Sep 22, Oct 20, Nov 17
303 871 5172 http://www.du.edu/~rstencel/Chamberlin/

Longmont Astronomical Society May 17 7 pm
FRCC, 2121 Miller Rd http://longmontastro.org/

April 5 Program
Choice Images of the Messier Catalog, Part II
Lee Gregory, NCAS

In the late 18th Century, Charles Messier's now celebrated list was a collection of objects to ignore. Lee began with a project to collect Hubble Space Telescope images for the list, and found only 9 M objects with complete images, and 20 have a released image containing part of the object. He has since done his best to compile Sky Survey frames at uniform scale, map plots, and the best images he can find, frequently from amateurs.



HST WFPC2 NASA AURA/STScI

M57, the Ring Nebula, has a complete HST image. The object is reasonably large and bright. Lee recalls a view in a 20" Starmaster at 1000x, showing stars within the rim of the Ring. The central star is a bit easier to visualize, but steady seeing makes a view possible. M58, M59, and M60 are galaxies. M60 has an HST iimage showing globular clusters in it. There is an interesting adjacent galaxy. Many globular clusters may be cores of dwarf galaxies that have been eaten by their host. Every decent sized galaxy has a central black hole with a mass of hundreds of millions, or a few billion solar masses. M 63 is the Sunflower Galaxy in the constellation Canes Venatici. Its dust lanes have strong patterning.

HST WFPC2 NASA AURA/STScI

M64 has a spectacular HST image. It is on the outskirts of the Virgo Cluster. Its prominent dust makes it the Black Eye Galaxy, distinctive even in small telescopes. M65, M66, and NGC 3628 comprise the Leo Trio. M66 has a spiral arm warped out of the galaxy's main plane. M67 is one of the oldest open clusters. It is by long-period variable F1 Hya. M69 is available in an unpublished HST monochrome file. M73 is a clump of 4 stars in Aquarius, not photographed much. M74 is a nice spiral in Pisces. Surface brightness is a bit low. M76, the Little Dumbbell, was nicely imaged by an observatory in Helsinki. M77 is easy to find by Delta Ceti. Its jets betray an active center. M78 in Orion is the only reflection nebula in the list. In February 2004 Jay McNeil reported appearance of a nearby faint nebula, which was not visible in Digital Sky Survey plates. Other prediscovery images have come to light, such as one by Evered Kreimer in October 1966. It is a variable nebula and has faded again. It is believed to consist of reflected light from eruptions of very young stellar object. M79 in Lepus is one of very few winter globular clusters. For the next M object, M80, look in Summer in Scorpius. M81 is one of the brighter galaxies. It has been spotted with unaided eye from dark sites. HST has imaged a portion. M82, the Cigar Galaxy, is the prototypical "irregular disk" galaxy. It is better understood as a normal disk and a Starburst Galaxy. The near edge-on disk is undergoing a dramatic surge in star formation. This is driving expulsion of dust and from its center, perpendicular to the disk. M83 is known as the Southern Pinwheel. HST has imaged its core, which is double. HST has also imaged the center of M84. It shows a dust lane and globular clusters. M84 and M86 are at the end of Makarian's Chain in the Virgo Cluster. The brightest galaxy in the cluster is M87. It has a supermassive black hole of over a billion solar masses. It has a jet extending from the center a million light-years. The jet is a challenge object for 16 to 18 inch amateur telescopes, and has been seen by Roger Clark in a 12 inch. High power of 400x or more is recommended. M 91 is a barred spiral and its center is seen in a closeup shot by HST. M92 is a pretty nice globular cluster, overlooked due to proximity to M13. M95, M96, and M105 form a second galaxy trio in Leo. M95 has an unusual central ring and bar structure. A CFHT image appears in the Astronomy Picture of the Day for 2007-Mar-14. M99 is an asymmetric spiral. It apparently suffered a near miss. M100 is a face-on spiral whose center has been imaged with HST. M101 has been released as a mosaic of HST frames.

HST ACS NASA AURA/STScI

M104, the Sombrero Galaxy, is one of Lee's favorites, another with a composite HST image. It is one of the largest HST mosaics. He suspects it is a ring galaxy, not evident since it is nearly edge on.

Lee Gregory is a retired HP engineer. He maintains the NCAS library. He has authored two books on Colorado: *Colorado Scenic Guide, Northern Edition, and Southern Edition.*

NCAS Business, April 5 2007

President Nate Perkins called the meeting to order. The meeting schedule and observing nights were announced. Space Night for Kruse Elementary is May 17. Nate brought more images of is 16" Ultralight telescope. Treasurer Bob Michael encouraged members to keep their $15 annual dues current, January of each year. Current club funds are at $364. His address is: 1212 Raintree Dr, A5; Fort Collins CO 80526. Phone is 970 482 3615. Greg Halac has a 75mm refractor donated to the club.

Celestron SkyScout Revealed, from Greg Halac

This article shows the guts of the Celestron SkyScout. (Be sure to click on the image to see the components.) Probably of most interest to the engineer-types on the list.

http://tinyurl.com/ypmlgv

Operation/use are much better described in the Nov'06 Sky & Telescope article, though.

April 20 2007 Fireball over Colorado

http://www.cloudbait.com/science/fireball20070420.html

Hello NCASTRO,
My husband and I were just leaving Morrison this evening heading west up the canyon toward Evergreen and saw a remarkable site. Something very bright and big streaked low across the sky, possibly in a northerly direction. The head was green, followed by a long thin tail. The tail, I think, was glowing red orange on the top and possibly a different color just below, but this is hard to accurately recall. The head though was green for sure. It disappeared behind the hill and then a large area of horizon lit up momentarily as it hit earth. I think the glow may have been green also, but hard to say for sure. The time was 11:00 PM, give or take a few minutes. It was the most startling and exciting sky event we have seen.

Thank you,
Sally H

From Andrea Schweitzer:

Yes, I saw it just as I got home from the Little Thompson Observatory. I saw the bolide from Fort Collins, almost right at 11:00 PM. It was to the west, not very high in the sky, and moving north. It had a bright green head and a long, thin tail that was also green, but not as strongly colored. (I did not see other colors.) I saw it streak low across the sky, almost horizontally above the mountains (from my perspective) but I did not see any impact nor light.

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From Mary Dunn:

In a message dated 4/22/2007 9:35:56 PM Mountain Daylight Time, lee_clark_ftc@yahoo.com writes:

My Friend Bob and I were talking in front of his house in Loveland, I think it was around 9pm maybe a little after. it was a long streek about a 45 degree angle down and angled west. Orange to green colors and a bit of violet or purple flash before going green. We did not see anything after that one.

===== ===== ===== =====
Wow -- a lot of buzz over this! It was 11PM and we were just south of the Larimer Landfill on Wilson Ave, Ft. Collins, driving south. My daughter and wife saw it first and at first thought there were folks shooting fireworks off in the field between us and the foothills due to brightness and slow travel. I turned to see it just descend behind the foothills with the brightness of a full greenish moon. My daughter and wife confirm the same colors -- bright greenish fireball with a teardrop shape and long red tail with red extending slightly around the ball. My wife noted yellow in the tail, that my daughter didn't see. My daughter described it as a 'raindrop shape'. It appeared to be heading due west and seemed to come from the E or maybe slightly ENE (assuming Wilson at that point was N-S). Unbelievable! Since we were in the car, I can not confirm sounds.

I found an interesting website that both our Astro Societies should keep in mind. Chris Peterson manages a site tracking such events. His website and information on this fireball is at: http://www.cloudbait.com/science/fireball20070420.html

There is great information on the site about what information is valuable to observe, if we have the whereabouts and wouldn't risk a car crash... ;-) If anyone has additional information, we should consider capturing it and submitting it.

CHRIS P -- I've copied you on this email as you may wish to consider pinging the area Astronomy Clubs for observation information. If you wish, the Estes Valley Astro Society can be either to me (I maintain an email list of members) or to evastro@beyondbb.com.

Let's not organize our Astronomy Day in the Park next time as it seems the harder we plan, the thicker the clouds!

Clear skies,
Mark

Survey of Women in Amateur Astronomy

We are actively seeking your input! As part of a research project in public astronomy education, two of your colleagues would like to gather data on the interests, attitudes, and experiences of female amateur astronomers. Judy Koke and Laura Danly have devised an on-line survey and invite women amateur astronomers to participate. The survey takes no longer than 10 minutes to complete. The survey can be found at:

http://websurveyor.net/wsb.dll/29886/waa.htm

The results will be published in an upcoming volume from the Astronomical Society of the Pacific on amateur astronomers and astronomy education entitled "Science Educators in Our Midst: Amateur Astronomers Engaged in Education and Public Outreach" (working title) due out in September, 2007.

We expect to finish collecting data by the middle of May. We would be most appreciative if you can visit our survey web site before that time. The more responses we gather, the better we can understand the landscape for women in amateur astronomy clubs. We hope our results might help illuminate how AA clubs can better recruit and serve women generally, and thus grow club membership.

If you have any questions or concerns about this survey, please feel free to contact either of the researchers.

Judy Koke Dr. Laura Danly
Senior Research Associate Curator
Institute for Learning Innovation Griffith Observatory
koke@ilinet.org laura.danly@lacity.org

Planetary Society Urges Congress to "Restore NASA's Vision"
April 24, 2007
Pasadena, CA
http://planetary.org/about/press/releases/2007/0424_Planetary_Society_Urges_Congress_to.html

"NASA's budget should be increased as was originally envisioned in order to restore its scientific underpinnings and to prepare for human exploration of the solar system," Louis Friedman, Executive Director of the Planetary Society, today testified to the U.S. House of Representatives Appropriations Subcommittee on Commerce, Justice, Science, and Related Agencies.

The Society supports the Administration's Vision for Space Exploration, but noted that it has now become distorted, with valuable science and exploration missions being cannibalized to pay for it. Friedman noted that the Vision's first goal calls for "a sustained and affordable human and robotic program to explore the solar system and beyond." However, the robotic program has been severely cut and underfunded, and the human program scarcely mentions exploration beyond the moon.

Another goal is to "Undertake lunar exploration activities to enable sustained human and robotic exploration of Mars and more distant destinations in the solar system." Instead, the current budget nearly eliminates Mars robotic exploration in the next decade, and lunar exploration activities have been subsumed by a costly plan to construct a permanent lunar base.

NASA is also abandoning the Vision's goals to search for evidence of life itself on Mars and elsewhere in the solar system, as well as to conduct telescope searches for Earth-like planets. Mars exploration has been cut, the mission to Jupiter's moon Europa and the Terrestrial Planet Finder mission have been eliminated, and the search for extraterrestrial life has been cut in half.

"These contradictions between the conduct of the NASA program and the originally stated Vision for Space Exploration explain why The Planetary Society supports the Vision but opposes its current implementation plan," says the Society's statement.

Full press release at:
http://planetary.org/about/press/releases/2007/0424_Planetary_Society_Urges_Congress_to.html

Hawking Makes Zero-G Flight
Well Stephen made it part way to space. He floated free of the crushing effects of gravity today. First leg on his way to space? Seems like he had a great time.
http://www.local6.com/news/13208496/detail.html
Thinkcosmic, Tom T.

From Bill Possel, Director of Mission Ops and Data Systems at LASP: AIM is Successfully Launched

From: whpossel at yahoo.com
To: front-range-tac@seds.org
Sent: Thu, 26 Apr 2007 04:40:15 -0700 (PDT)
Subject: * FRAC * AIM Successfully Launched

We had a successful launch of the Aeronomy of Ice in the Mesosphere (AIM) spacecraft yesterday. Mission operations are at CU's Laboratory for Atmospheric and Space Physics (LASP). We'll be checking out the spacecraft and payloads over the next 30 days.

http://www.dailycamera.com/news/2007/apr/26/aim-is-true-for-cu/

http://www.thedenverchannel.com/video/13127282/index.html

From Gerry Reynolds: Earth-like Planet Candidate

An Earth-like planet spotted outside our solar system is the first found that could support liquid water and harbor life, scientists announced today.
http://www.msnbc.msn.com/id/18293978/from/ET/

Televue Ethos Eyepiece: 13mm, 100 Degree Apparent Field of View
http://www.televue.com/engine/page.asp?ID=311

Best Looks

Moon	By Antares + Jupiter 5/4, 5/5, 5/31 By Mars 5/12 By Mercury 5/17 eve; by Venus 5/19; by Saturn 5/27
Mercury	Low in W at dusk last half of month
Venus	In W at dusk
Mars	Low in SE at sunrise
Jupiter	Low in S predawn
Saturn	High in W in evening
Uranus	Low in ESE predawn late in month
Neptune	Low in SE predawn

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

TO:

International Space Station Passes May 2007

Date	Mag	Starts			Max. Altitude			Ends		
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
16 May	1.8	04:54:14	10	SSE	04:55:55	15	SE	04:57:37	10	E
18 May	1.8	04:01:34	12	SSE	04:02:19	13	SE	04:03:42	10	ESE
19 May	0.0	04:21:21	23	SSW	04:22:39	39	SE	04:25:20	10	ENE
20 May	-0.7	04:41:00	16	WSW	04:43:00	60	NW	04:45:56	10	NE
21 May	0.6	03:29:20	29	ESE	03:29:20	29	ESE	03:31:21	10	ENE
21 May	0.9	05:01:17	10	W	05:03:43	24	NNW	05:06:09	10	NNE
22 May	-0.8	03:48:47	63	W	03:49:05	70	NNW	03:51:55	10	NE
23 May	2.3	02:36:55	12	ENE	02:36:55	12	ENE	02:37:10	10	ENE
23 May	0.8	04:08:08	18	WNW	04:09:33	27	NNW	04:12:04	10	NE
24 May	1.2	02:56:11	28	NE	02:56:11	28	NE	02:57:43	10	NE
24 May	1.8	04:28:24	10	WNW	04:30:10	15	NNW	04:31:57	10	NNE
25 May	0.8	03:15:21	29	NNW	03:15:21	29	NNW	03:17:48	10	NE
25 May	2.3	04:50:13	10	NNW	04:50:52	11	N	04:51:32	10	N
26 May	2.6	02:03:14	11	NE	02:03:14	11	NE	02:03:19	10	NE
26 May	1.8	03:34:25	13	NW	03:35:43	16	NNW	03:37:36	10	NNE
27 May	2.0	02:22:14	19	NNE	02:22:14	19	NNE	02:23:20	10	NE
27 May	2.4	03:55:27	10	NNW	03:56:18	11	N	03:57:09	10	N
28 May	1.8	02:41:08	17	NNW	02:41:08	17	NNW	02:43:04	10	NNE
29 May	2.5	03:00:32	10	NNW	03:01:33	11	NNW	03:02:34	10	N
29 May	2.7	04:36:59	10	N	04:37:30	10	N	04:38:00	10	NNE
30 May	2.5	01:47:30	14	N	01:47:30	14	N	01:48:21	10	NNE
30 May	2.5	04:56:16	10	NNW	04:57:56	14	NNE	04:59:38	10	NE
31 May	2.5	02:06:07	11	NNW	02:06:36	12	NNW	02:07:47	10	NNE
31 May	2.9	03:42:28	10	N	03:42:32	10	N	03:42:37	10	N

Check passes at: http://www.heavens-above.com/main.aspx?Loc=Fort+Collins&Lat=40.585&Lng=-105.084&Alt=1525&TZ=MST