IO – February 2007

Issue 2007-02
Eugene Astronomical Society

Eugene Astronomical Society,
Annual Club Dues $25, Board Members:
President: Sam Pitts - 688-7330
Secretary: Jerry Oltion - 343-4758
Jacob Strandlien, Tommy Lightning Bolt
& Fred Domineack

www.eugeneastro.org
EAS is a Proud Member of:
The Astronomical League
The World's Largest Federation of Amateur Astronomers

IO editor- sampitts@comcast.net 688-7330
Io *(EYE-oh) is nearest to Jupiter and fastest orbiting of the four Galilean moons*

Monday- February 5th MEETING

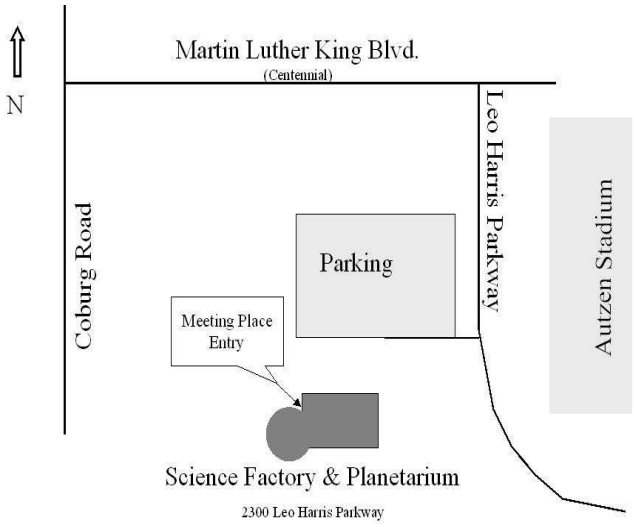
EUGENE ASTRONOMICAL SOCIETY
Held at:
"Science Factory Children's Museum & Planetarium"
2300 Leo Harris Parkway, Eugene
SW of Autzen Stadium

"Journey to the Outskirts of the Universe"

By: Larry Deckman,
Avid Amateur Astronomer

Eugene's own Larry Deckman, founder & owner of "Star Finders.com" and dedicated amateur astronomer, will present his show "Journey to the Outskirts of the Universe". Larry will take us on a journey from 150 miles above our beautiful planet's surface outward, through the solar system and beyond. Beautiful images of the cosmos from telescopes and space craft will augment our journey with narration by Larry Deckman along the way. We will end up at the far reaches of our universe viewing beautiful and vast galactic clusters. Come and enjoy the wonders of the night sky with Larry Deckman & Eugene Astronomical Society at The Science Factory's comfortable Planetarium. The meeting will begin at **7:00 PM** in the Planetarium.

The Eugene Astronomical Society is a group of amateur astronomers dedicated to observing the sky and learning about the Universe, and sharing that understanding and appreciation of astronomy with students and the general public. EAS has been doing astronomy education and public outreach for many years. The EAS holds club meetings on the first Monday of each month at 7 PM at Science Factory Children's Museum & Planetarium. Guests are welcome to visit; we ask for a $1 guest contribution. Meetings feature speakers with presentations on topics of interest to club members, current viewing opportunities, telescope help, and star party planning.



Don't forget EAS Members raffle for an 8" telescope. The raffle will continue until all 100 tickets are sold to EAS members. Tickets are $ 5.00 each or 5 tickets for $20.00 for a chance for club members to win an Orion 8" Dobsoian Telescope. There are a few tickets left. See details and rules posted on ticket box.

Observing in January

February 1	February 10	February 17	February 24
Mercury Set 6:47 PM	Mercury Set 7:08 PM	Mercury Set 6:41 PM	Mercury Set 5:40 PM
Venus Set 7:20 PM	Venus Set 7:43 PM	Venus Set 8:16 PM	Venus Set 8:06 PM
Mars Rise 5:53 AM	Mars Rise 5:44 AM	Mars Rise 5:35 AM	Mars Rise 5:25 AM
Jupiter Rise 3:46 AM	Jupiter Rise 3:17 AM	Jupiter Rise 2:54 AM	Jupiter Rise 2:31 AM
Saturn Rise 6:00 PM	Saturn Rise 5:21 PM	Saturn Rise 4:50 PM	Saturn Rise 4:20 PM
Uranus Set 7:56 PM	Uranus Set 7:24 PM	Uranus Set 6:58 PM	Uranus Set 6:33 PM
Neptune Set 5:53 PM	Neptune Set 5:20 PM	Neptune Set 4:54 PM	Neptune Set 4:27 PM
Pluto Rise 4:22 AM	Pluto Rise 3:47 AM	Pluto Rise 3:20 AM	Pluto Rise 2:53 AM

All times: U.S. Pacific Daylight Time (May-October) = UT - 7 hours. **Pacific Standard Time (Nov.-April) = UT-8**

Date	Moonrise	Moonset	Sunrise	Sunset	Twilight	Twilight
2/1/2007	16:56	07:34	07:30	17:23	05:51	19:02
2/2/2007	18:05	08:00	07:29	17:24	05:50	19:03
2/3/2007	19:12	08:21	07:28	17:25	05:49	19:04
2/4/2007	20:17	08:39	07:27	17:27	05:48	19:05
2/5/2007	21:20	08:56	07:26	17:28	05:47	19:06
2/6/2007	22:22	09:12	07:24	17:30	05:46	19:08
2/7/2007	23:26	09:29	07:23	17:31	05:45	19:09
2/8/2007	------	09:47	07:22	17:32	05:44	19:10
2/9/2007	00:30	10:09	07:20	17:34	05:43	19:11
2/10/2007	01:38	10:36	07:19	17:35	05:42	19:13
2/11/2007	02:45	11:11	07:18	17:36	05:40	19:14
2/12/2007	03:51	11:57	07:16	17:38	05:39	19:15
2/13/2007	04:50	12:54	07:15	17:39	05:38	19:16
2/14/2007	05:41	14:04	07:13	17:41	05:37	19:18
2/15/2007	06:22	15:23	07:12	17:42	05:35	19:19
2/16/2007	06:55	16:44	07:10	17:43	05:34	19:20
2/17/2007	07:22	18:06	07:09	17:45	05:32	19:21
2/18/2007	07:45	19:27	07:07	17:46	05:31	19:23
2/19/2007	08:06	20:47	07:06	17:47	05:30	19:24
2/20/2007	08:28	22:08	07:04	17:49	05:28	19:25
2/21/2007	08:51	23:29	07:03	17:50	05:27	19:27
2/22/2007	09:18	------	07:01	17:51	05:25	19:28
2/23/2007	09:51	00:49	07:00	17:53	05:24	19:29
2/24/2007	10:32	02:06	06:58	17:54	05:22	19:30
2/25/2007	11:24	03:16	06:56	17:55	05:21	19:32
2/26/2007	12:25	04:14	06:55	17:57	05:19	19:33
2/27/2007	13:34	05:01	06:53	17:58	05:17	19:34
2/28/2007	14:44	05:36	06:51	17:59	05:16	19:35

All times are for Eugene, Oregon Latitude 44º 3’ 8” Longitude 123º 5’ 8” for listed Date

Events

February 2007

1	Asteroid 2006 AM4 Near-Earth Flyby (0.013 AU) 1.2 Million Miles; Deadline to Submit Names to Phoenix Mission [1] Venus & Mercury climb in western sky from 1-7th,
4	Asteroid 2004 RN251 Near-Earth Flyby (0.061 AU) ; Sally Ride Science Festival, Irvine, California; 40th Anniversary (1967), Lunar Orbiter 3 Launch
5	EAS Meeting
6	Uranus (Mag. 5.93) 0.7º north of Venus (Mag. -3.94);
7	Mercury At Its Greatest Eastern Elongation [2] Mag. 0.48 7" diameter; Comet C/2006 M4 (Swan) sw of Mercury (Mag. 13.7)
6	Saturn At Opposition [3] (NASA) S &T state the 10th, Saturn will be Mag 0.00 Saturn's disk 20" & rings 45"
10	Asteroid 33876 (2000 JJ57) Occults HIP 10324 (4.4 Magnitude Star) *
12	2007 Aspen Winter Conference: Clusters of Galaxies as Cosmological Probes, Aspen, Colorado; EAS board meeting at EWEB 7:00 PM open to all members
15	American Association for the Advancement of Science (AAAS) Annual Meeting, San Francisco, California
18	Chinese New Year
19	Venus will be below the thin Crescent moon, Mercury near the horizon. This will make a nice photo opportunity.
20	45th Anniversary (1962), Friendship 7 Launch (John Glenn)
22	Cassini, Titan Flyby (590 miles away from Titan); Lecture: The Dawn Mission to the Asteroid Belt, Pasadena, California
25	Rosetta[4], Mars Flyby**;** Conference: Colliders to Cosmic Rays 2007, Tahoe, California
27	Bernard Lyot's 110th Birthday (1897):designed coronagraph; Workshop on Science Associated with the Lunar Exploration Architecture, Tempe, Arizona; New Horizons (mission to Pluto and the Kuiper Belt), Jupiter Flyby
28	*Jupiter will be Mag. -2.03 & 36.4" diameter , rise 2:37 AM*

AU=Astronomical Unit (92,955,800 miles)

[1] *Fly Your Name on NASA's Phoenix Mission to Mars* ***The Planetary Society*** *Will Send a Message from Earth and Visions of Mars*

[2] ***Elongation*** *is an astronomical term that refers to the angle between the Sun and a planet, as viewed from Earth.When an inferior planet is visible after sunset, it is near its* ***greatest eastern elongation****. When an inferior planet is visible before sunrise, it is near its* ***greatest western elongation****. The value of the greatest elongation (west or east), for Mercury, is between 18° and 28°; and for Venus between 45° and 47°.*

[3] *A planet (or asteroid or comet) is said to be "in opposition" when it is in opposition to the Sun as seen from the Earth. This is the best time to observe a planet because:* it is visible almost all night, rising around sunset, culminating around midnight and setting around sunrise; its orbit brings it closest to the Earth, making it appear bigger and brighter; the opposition effect increases the reflected light from bodies with unobscured rough surfaces

[4] *Since its launch in March 2004, Rosetta has been bouncing around the inner solar system on a trajectory that will eventually lead it to its final destination in the first half of 2014 – comet 67P. After this February's Mars swing-by, the next Earth swing-by will take place on 13 November 2007.*

Opposition occurs only in superior planets.

* Event Date/Time	Rank	Asteroid	Star	Visibility	dM D A	Comments
10 Feb 2007 , 02:28 UT	5	(33876) 2000 JJ57 mag 18.0	HIP 10324 mag 4.4	USA, Mexico	13.6m 0.4s 85°	Very close double star.

Friends of Pine Mountain Observatory

At the recent Friends of Pine Mountain Observatory (FOPMO) meeting, EAS member Tracy Stephensen was elected President of FOPMO, as veteran President Mary Hill "retired" to a Member at Large position. Greg Hogue from Bend is the new Vice President-Membership, Mark Dunaway continues as Treasurer, and Dareth Murray from Portland is the new Secretary. The UO Pine Mountain website is undergoing a facelift, including an interactive aerial map of PMO, plus the redone weather station, the FOPMO website is also undergoing a facelift. This coming summer will be very busy at PMO as several construction projects will be underway to facilitate more efficient use of smaller telescopes as well as establishing a gift shop that will be more accessible to the public.

We continue to seek people interested in helping out during summer weekends, both as tour guides and as sales staff at the gift shop, and we are particularly encouraging younger people, including high school students, to volunteer for this extraordinary experience, participating at a real observatory. Please contact Greg Hogue, 541-771-6987, or locally, Rick or Tracy or Sam for further information.

OMSI Astrophotography Conference 2007

Introduction to Astronomy Image Processing for Electronic and Film Cameras

Saturday, March 10, 2007, 8:00 am to 10:00 pm
Oregon Museum of Science and Industry (OMSI) Auditorium
1945 SE Water Avenue
Portland, OR 97214-3354

Astrophotography using electronic cameras and film cameras provides many benefits such as observing fainter details, making scientific measurements and producing stunning images that are shared with others. A key part of astrophotography is using image processing software to remove camera defects, lens defects and telescope defects. Also, image processing seems to have a magical ability to reduce sky glow and to enhance hidden details in the image.

The OMSI Astrophotography Conference covers the various aspects of image processing from the basics to advanced techniques. This conference is designed for attendees with no image processing experience to those who use image processing for their Astro images.

The first session in the morning introduces the fundamentals of image processing as applied to astrophotography and provides a foundation for sessions that follow. The other sessions will show how to plan your image taking and how raw camera images are transformed into spectacular images of the universe. A special session on scientific measurements will provide you with a overview of astrometry and photometry and demonstrate how to use image processing software to make astrometry and photometry measurements on your images.

Two image processing labs, one using Photoshop and the other using free software, will take you step-by-step in improving Astro images. Attendees are encouraged to bring their laptops with Photoshop CS3 Beta, DeepSkyStacker, PixInsight LE and GIMP and follow along in these labs. Tables, soft seat chairs and AC power are provided for the attendees.

At the end of the conference is an open session where attendees can present their image processing techniques or projects. A conference CD-ROM with presentations, reference materials and software is provided to each attendee.

The conference is sponsored and hosed by Jim Todd, (OMSI).

http://www.stargazing.net/david/OMSI/index.html

EAS Dues

Quite a few people haven't paid their annual dues. If you intend to stay in the club but haven't paid your dues yet, please renew at the February 5th meeting or send a check for $25 to the Eugene Astronomical Society, P.O. Box 7264, Eugene, OR 97401. If you can't remember if you've renewed, email our secretary, Jerry Oltion **j.oltion@sff.net** and he will tell you.

Jerry Oltion-EAS Secretary

Note From: Sam Pitts- EAS President:

Folks EAS really relies on its membership dues to sustain the club. 25$ is a small amount to pay for what you receive in return. We don't charge for any events we just ask for donations. EAS is here to help promote astronomy and share the skies with everyone. So get those checkbooks out and help a good cause. Donations in excess of the standard club dues are always appreciated.

Get Up Close and Personal with The UNIVERSE This Month

The Science Factory Planetarium

EUGENE, Ore. — Thanks to the Hubble Space Telescope, visitors of the Science Factory Planetarium will travel through the solar system and view stunning images and discoveries from space during **Hubble's Universe** every Saturday and Sunday at 2:00 p.m. beginning January 27. The opening of the new planetarium show coincides with the January 27 Grand Opening of a new exhibit at the museum, **Bone up on Bones.**

"After 16 years of studying the universe, the telescope's discoveries and stunning photographs continue to amaze and delight us," said Planetarium Director Susan Peterson. "The universe continually proves to be more complex, more mysterious and much more beautiful than we ever thought."

The new show, appropriate for ages 10 and up, highlights scientific discoveries that were made since the Hubble began its orbit in 1990 such as Pluto's two small moons, Nix and Hydra. We have seen for the first time the disks of dust and gas surrounding the super massive black holes in the hearts of galaxies containing the mass of hundreds of millions of stars and the light from galaxies that has taken about 13 billion years to reach us.

Continuing at the Planetarium every Saturday and Sunday at 1:00 p.m. is **Up in the Sky**, an introductory show for younger audiences to learn about the planet, constellations and solar system at a primary level.

Admission for each show is $4, $7 with combined entrance to the Science Factory Exhibit Hall, or free for members and children under 3.

For more information about **Hubble's Universe** or the Science Factory Planetarium, contact the planetarium at 682-7888 or visit **www.sciencefactory**.org. For more information about the NASA Hubble Space Telescope, visit its official site at **www.hubblesite.org**.

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*The Science Factory Children's Museum & Planetarium is an Oregon non-profit whose mission is to "engage, excite and inspire children to explore science, technology and humanity." The Science Factory is open Wednesday - Sunday, noon - 4 PM and on the first Friday of each month for Tot Discovery Days from 10 am- 12 Noon. Call 682-7888 or visit **http://www.sciencefactory.org**/ for more information.*

A Great Big Wreck

by Dr. Tony Phillips

People worry about asteroids. Being hit by a space rock can really ruin your day. But that's nothing. How would you like to be hit by a whole galaxy?

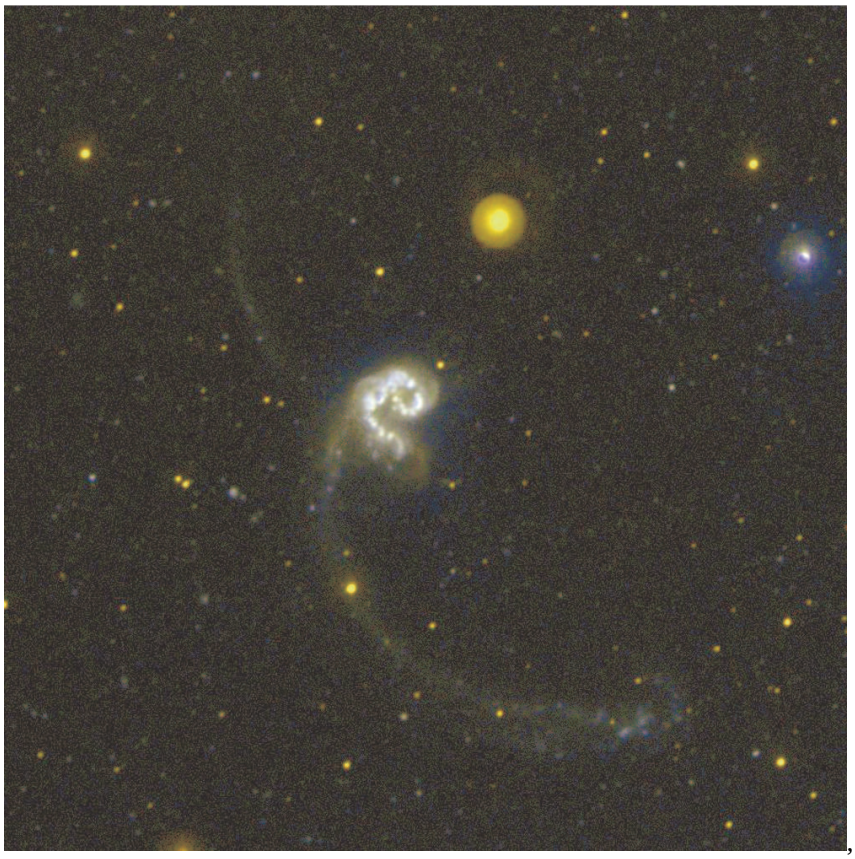
It could happen. Astronomers have long known that the Andromeda Galaxy is on a collision course with the Milky Way. In about 3 billion years, the two great star systems will crash together. Earth will be in the middle of the biggest wreck in our part of the Universe.

Astronomer John Hibbard isn't worried. "Galaxy collisions aren't so bad," he says. A typical spiral galaxy contains a hundred billion stars, yet when two such behemoths run into each other "very few stars collide. The stars are like pinpricks with lots of space between them. The chance of a direct hit, star vs. star, is very low."

Hibbard knows because he studies colliding galaxies, particularly a nearby pair called the Antennae. "The two galaxies of the Antennae system are about the same size and type as Andromeda and the Milky Way." He believes that the Antennae are giving us a preview of what's going to happen to our own galaxy.

The Antennae get their name from two vast streamers of stars that resemble the feelers on top of an insect's head. These streamers, called "tidal tails," are created by gravitational forces—one galaxy pulling stars from the other. The tails appear to be scenes of incredible violence.

But looks can be deceiving: "Actually, the tails are quiet places," says Hibbard. "They're the peaceful suburbs of the Antennae." He came to this conclusion using data from GALEX, an ultraviolet space telescope launched by NASA in 2003.



This GALEX UV image of the colliding Antennae Galaxies shows areas of active star formation, which is not in the tidal tails as one might expect.

The true violence of colliding galaxies is star formation. While individual stars rarely collide, vast interstellar clouds of gas *do* smash together. These clouds collapse. Gravity pulls the infalling gas into denser knots until, finally, new stars are born. Young stars are difficult to be around. They emit intensely unpleasant radiation and tend to "go supernova."

GALEX can pinpoint hot young stars by the UV radiation they emit and, in combination with other data, measure the rate of star birth. "Surprisingly," Hibbard says, "star formation rates are low in the tidal tails, several times lower than what we experience here in the Milky Way." The merging cores of the Antennae, on the other hand, are sizzling with new stars, ready to explode.

So what should you do when *your* galaxy collides? A tip from GALEX: head for the tails.

To see more GALEX images, visit **www.galex.caltech.edu**. Kids can read about galaxies and how a telescope can be a time machine at spaceplace.nasa.gov/en/educators/galex_puzzles.pdf.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Larry Deckman

Larry Deckman is will present a show at Eugene Astronomical Society's February Meeting. Larry is an Attorney in Eugene with a solo practice avoiding litigation and concentrating on preventative legal services." Larry has a passion for the night skies along with a nack for inventing. In 1971 Games magazine recognized "The Kaleidoscope Game" designed by Larry as one of the top 100 games of the year. In 1983 Larry wrote a weekly column called "What's Happening in the Sky,"

Larry's love of night skies and identifying various constellations and objects lead him to develop products to help new star gazers find their way. The Star Finders line of astronomy-related tools, including glow-in-the-dark star maps, aresold around the country at the Smithsonian and other natural-history museums. Visit Larry Deckman's site **Starfinders.com** and see what he has to offer. The science factory has some of his products in their front lobby.

6" Size

10" Size

The Star Finder is a 10" star wheel that puts the heavens into your hands. Rotate the wheels to match the date and the time, and an instant portrait of the sky appears. The Star Finder is made for use in the United States, Canada, Europe, and most of Asia, and identifies the 60 brightest stars and 40 classical constellations. It's completely weatherproof and includes a primer on star gazing, major planetary positions through 2010, and an astronomical red filter for use with a flashlight at night. Just one night under the stars, or when the sky is in the news, and you'll know the value of this simple tool. For ages 8 to adult.

If you'd like to contact Star Finders, our address is
2406 Lawrence,
Eugene, Oregon 97405-2660 USA.

Phone 541-686-6754
Fax 541-343-0194

or email us at info@starfinders.com

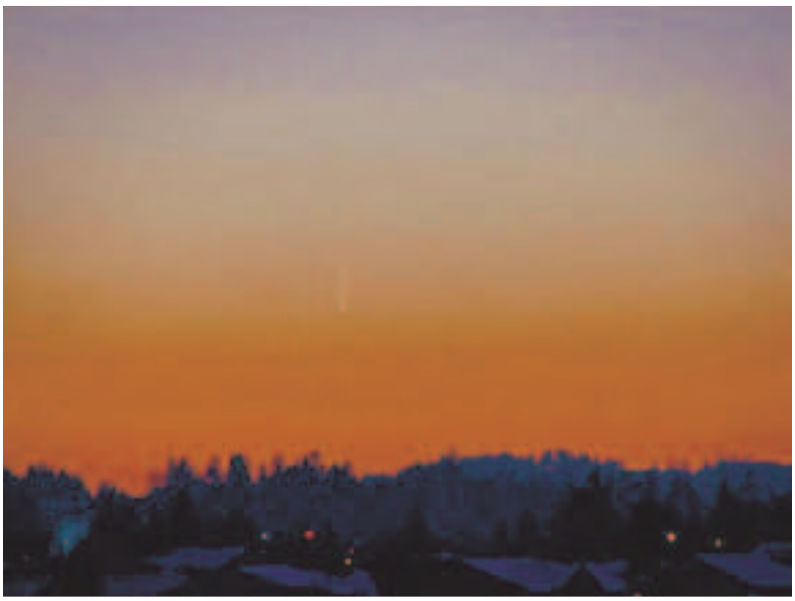
Comet McNaught made a beautiful showing and for a couple of day's right at the end, Eugene had two clear evenings. Thursday January 11th gave the best view from Eugene with a few clouds in the West. Several EAS members were at one of their favorite locales, "College Hill Reservoir" on Lawrence & 24th St. The Reservoir has a flat concrete top and is maintained by EWEB. This open space has been available for local residents to use for many decades and EAS members bring their scopes for the whole community to enjoy.

Some lucky members captured McNaught just as the sun went down with McNaught pursuing it into the western horizon. McNaught quickly dipped below the horizon before the nighttime skies darkened enough to reveal a solitary star. News spread fast as this was a very bright comet with a long radiant tail, visible long after the comet's head had slipped below the horizon.

The following evening, College Hill reservoir found Eugene Astronomical Society's most ardent observes varying for another glimpse of the setting comet McNaught. The temperatures dipped below freezing and settled in the twenties soon after sunset. KEZI, & KVAL, both local news stations were on hand this time and interviewed several of EAS's finest amateur astronomers. Images were taken and interviews done, all to be seen on the eleven o'clock news.

We were sure lucky to have a break in the weather to see McNaught and thankful to EWEB for continuing the public use and enjoyment of their facility.

Below are some of the images captured by EAS members of Comet McNaught



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