

Eugene Astronomical Society



# IO - February 2020

Eugene Astronomical Society  
 Annual Club Dues \$25  
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 The Astronomical League



Next Meeting Thursday, February 20th, 7:00 p.m.

## Tales of the McDonald Observatory Lunar Ranging Project! by Bernie Bopp

About his upcoming talk at our February 20th meeting, Bernie writes: Last July it was my privilege to speak to the Eugene Astronomical Society about the Apollo 11 project and my small role in the Lunar Ranging Retroreflector experiment (LR3) left on the moon by Neil Armstrong and Buzz Aldrin. I described the experiment as straightforward and successful science, deriving precise lunar distances and serving as another important test of General Relativity. Absolutely right, but it wasn't quite that simple and straightforward. The LR3 project at McDonald Observatory had some early glitches, goofy mistakes, and unnerving moments, as I suspect all Big Science projects have. I'm going to talk about the early months of the McDonald LR3 project, and attempt to answer such cosmic questions as:

- If this was such a straightforward experiment, why did it take several months to finally get any useful data?
- Was one of the McDonald Observatory telescopes really haunted??
- What role did a humble banana play in the ultimate success of LR3???
- And finally, why did one exciting evening at the observatory result in your humble presenter cowering in his dorm room and hiding under the bed?????"

Come hear Bernie's story and relive the early days of the Apollo missions through his eyes!

The meeting is at 7:00 on Thursday, February 20th at the Science Center planetarium. 2300 Leo Harris Parkway in Eugene (behind Autzen Stadium).

## We Now Have a Doorbell!

Some ideas are so simple you have to wonder why we didn't think of them years ago. One of the more serious drawbacks of our meeting space at the planetarium is that we have to lock the front doors during our meetings so people don't wander into the exhibit space while nobody is watching. Frank Gornto has been staying at the front desk as much as possible to let latecomers in, but he can't always be there.

The solution: a doorbell! We bought a wireless doorbell, and we stick the transmitter to the window next to the doors. If you arrive late and find the door locked, push the button and an unobtrusive but easily noticeable light blinks on the receiver unit inside the planetarium. The person nearest the exit will go let you in. Problem solved!

# January Meeting Report

## Annual Telescope Workshop

Our annual telescope workshop on January 16th was well attended and lively. Several people brought telescopes with various problems that needed fixing, and several more brought scopes that they just needed some instruction on. We were able to help everyone, including the person whose scope needed to have the primary mirror cell removed and readjusted. (The retaining clamps were cranked down tight enough to bend the mirror!)

The sky cooperated with enough sucker holes to let us star test the scopes that needed it, but not enough to let us enjoy using any of the scopes for fun. The planetarium was warm and cozy, though, and conducive to conversation, so we all got a lot of visiting in.

## January Observing Report

We've been skunked for two months in a row now. Scopes that arrived as Christmas presents are still in their boxes, or set up in living rooms awaiting clear sky like puppies awaiting a pat on the head from a master that's not necessarily cruel, but certainly distracted.

On the other hand, snowpack in the high country is above normal. Willamette Pass ski area reports a 60-inch base...which means Eagle's Ridge is inaccessible even if the sky clears. Eureka Ridge and Linslaw Point might even be under a blanket of cold stuff.

Anybody up for a field trip to Arizona?



Photo credit: Maggie Masetti

## Next First Quarter Friday: February 28th

Our January 3rd star party was rained out, as was our Saturday backup. Our January 31st star party actually happened, but we were chasing sucker holes all night. Not much of an improvement, really.

Our next star party will be attempted on February 28th.

First Quarter Fridays are laid-back opportunities to do some observing and promote astronomy at the same time. Mark your calendar and bring your scope to the College Hill Reservoir (24th and Lawrence in Eugene) and share the view with whoever shows up. Here's the schedule through 2020. Star parties start at dusk or 6:00, whichever is later. (6:15 in February.)

February 28 (25% lit)

May 1 (65% lit)

July 24 (24% lit)

September 25 (71% lit)

December 18 (23% lit)

March (none)

May 29 (50% lit)

August 15: Dexter Dark Sky Party

October 23 (56% lit)

April 3 (79% lit)

June 26 (37% lit)

August 28 (84% lit)

November 20 (39% lit)



Photo Credit: NSF/NSO/AURA

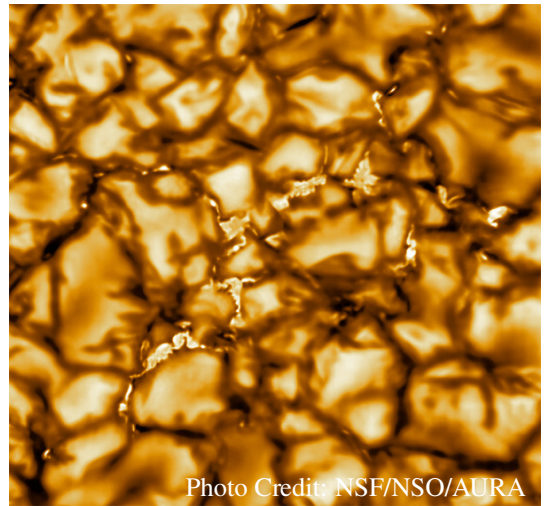


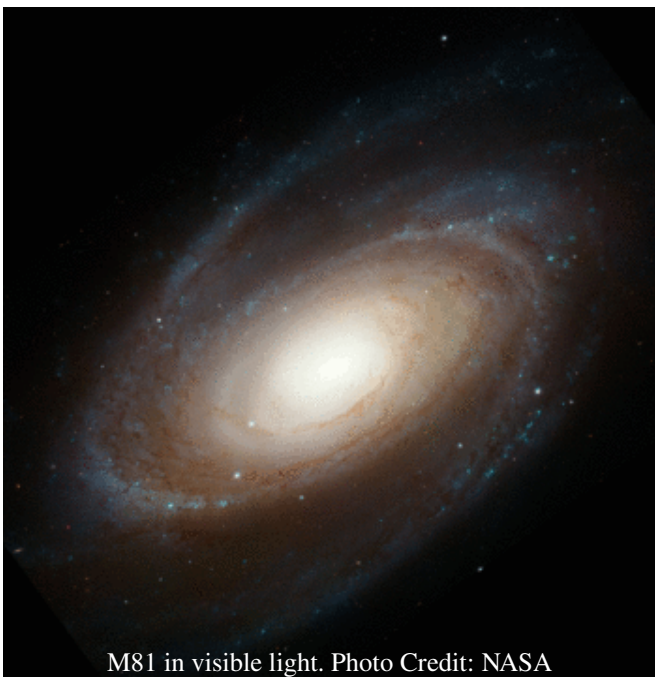
Photo Credit: NSF/NSO/AURA

## Daniel K. Inouye Solar Telescope Comes Online

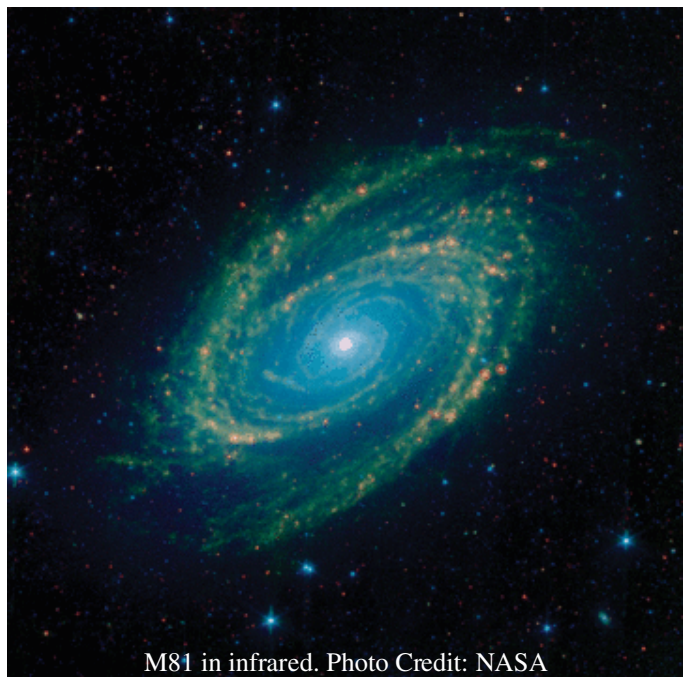
Seven years in the building, the Daniel K. Inouye Solar Telescope has finally gotten first light. And its first 15-megapixel photograph has already broken the record for the sharpest photo of the Sun taken by a ground-based observatory. With a four-meter mirror and adaptive optics, it resolves details down to 15 miles, roughly the size of the Eugene/Springfield metro area. Situated at 10,000 feet atop Maui's Haleakala, the Inouye Solar Scope will likely collect photons considerably more often than if it were in Eugene.

## Spitzer Space Telescope Goes Offline

You gain one, you lose one. The Spitzer Infrared Telescope has reached the end of its useful lifetime and will be shut down at the end of January. Spitzer was one of NASA's four "Great Observatories" that included The Hubble, the Compton Gamma Ray, and the Chandra X-ray Telescopes. It was responsible for looking deep inside galaxies to reveal their inner structure, finding exoplanets, and pushing the boundaries of our observations all the way back to the cosmic microwave background.



M81 in visible light. Photo Credit: NASA

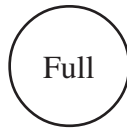


M81 in infrared. Photo Credit: NASA





# Observing in February



Feb 1, 5:42 PM	Feb 8, 11:33 PM	Feb 15, 2:17 PM	Feb 23, 7:32 AM
Mercury Set: 6:38 PM	Mercury Set: 7:06 PM	Mercury Set: 7:08 PM	Mercury lost in Sun
Venus Set: 8:52 PM	Venus Set: 9:08 PM	Venus Set: 9:24 PM	Venus Set: 9:42 PM
Mars Rise: 4:16 AM	Mars Rise: 4:12 AM	Mars Rise: 4:06 AM	Mars Rise: 3:59 AM
Jupiter Rise: 5:59 AM	Jupiter Rise: 5:37 AM	Jupiter Rise: 5:15 AM	Jupiter Rise: 4:49 AM
Saturn Rise: 6:40 AM	Saturn Rise: 6:15 AM	Saturn Rise: 5:50 AM	Saturn Rise: 5:21 AM
Uranus Set: 00:22 AM	Uranus Set: 11:52 PM	Uranus Set: 11:25 PM	Uranus Set: 10:55 PM
Neptune Set: 8:19 PM	Neptune Set: 7:53 PM	Neptune Set: 7:26 PM	Neptune Set: 6:57 PM
Pluto Rise: 6:38 AM	Pluto Rise: 6:11 AM	Pluto Rise: 5:44 AM	Pluto Rise: 5:14 AM

All times Pacific Standard Time (November 3, 2019 - March 7, 2020 = UT -8 hours) or Pacific Daylight Time (March 8 - Oct 31, 2020 = UT -7 hours)

Date	Moon Rise	Moon Set	Twilight Begin	Sun Rise	Sun Set	Twilight End
2/1/2020	11:20	00:14	05:51	07:30	17:22	19:01
2/2/2020	11:47	01:16	05:50	07:29	17:24	19:03
2/3/2020	12:18	02:19	05:49	07:28	17:25	19:04
2/4/2020	12:55	03:24	05:48	07:27	17:26	19:05
2/5/2020	13:41	04:29	05:47	07:26	17:28	19:06
2/6/2020	14:38	05:31	05:46	07:24	17:29	19:07
2/7/2020	15:44	06:27	05:45	07:23	17:31	19:09
2/8/2020	16:58	07:16	05:44	07:22	17:32	19:10
2/9/2020	18:16	07:57	05:43	07:20	17:33	19:11
2/10/2020	19:35	08:33	05:42	07:19	17:35	19:12
2/11/2020	20:53	09:04	05:40	07:18	17:36	19:14
2/12/2020	22:10	09:33	05:39	07:16	17:37	19:15
2/13/2020	23:25	10:01	05:38	07:15	17:39	19:16
2/14/2020		10:30	05:37	07:14	17:40	19:17
2/15/2020	00:39	11:01	05:35	07:12	17:42	19:19
2/16/2020	01:50	11:37	05:34	07:11	17:43	19:20
2/17/2020	02:58	12:18	05:32	07:09	17:44	19:21
2/18/2020	04:01	13:05	05:31	07:08	17:46	19:22
2/19/2020	04:57	13:58	05:30	07:06	17:47	19:24
2/20/2020	05:45	14:57	05:28	07:05	17:48	19:25
2/21/2020	06:25	15:58	05:27	07:03	17:50	19:26
2/22/2020	06:59	17:00	05:25	07:01	17:51	19:27
2/23/2020	07:28	18:02	05:24	07:00	17:52	19:29
2/24/2020	07:53	19:04	05:22	06:58	17:54	19:30
2/25/2020	08:16	20:04	05:21	06:57	17:55	19:31
2/26/2020	08:38	21:04	05:19	06:55	17:56	19:32
2/27/2020	09:00	22:04	05:17	06:53	17:58	19:34
2/28/2020	09:22	23:05	05:16	06:52	17:59	19:35
2/29/2020	09:47		05:14	06:50	18:00	19:36

## Items of Interest This Month

Mercury visible just after sunset during 2nd week of month.

Venus is high in the west after sunset all month.

2/3 Moon grazes 7.5 magnitude star in Hyades ~6.30 PM. Graze path is a few miles north of town.

2/5 Moon occults mag. 2.9 star in Gemini at 8:13 PM. Reappearance 8:48 PM.

2/10 Mercury at greatest eastern elongation. 15° above horizon at sunset. Also tonight: Neptune within 3 arc-minutes of mag. 4.2 star Phi Aquarii. (That's close!)

2/18 **Moon occults Mars** in early morning (before moonrise). Reappearance is visible after moonrise, 4:40 AM.

**2/28 First Quarter Friday star party.**

