

IO March 2018

The Newsletter of the
Eugene Astronomical Society

PO Box 7264
Springfield, OR 97475

Next Meeting: *Thursday, March 15*

The Messier Marathon

By Jerry Oltion

March is the month for the Messier Marathon, the one time of year when it's possible to view all 110 Messier objects in one night. The weekend of March 16-18 is our best opportunity this year, so on the 15th Jerry Oltion will take us through a marathon, starting with the objects low in the west at sunset and showing us what order to observe successive objects as the night progresses. He'll condense the entire night into an hour's program, ending with the last objects rising in the east just before dawn.

Even if you don't plan to run a Messier marathon, this program showcases some of the most beautiful objects in the night sky, so it will be a visual spectacle well worth attending. The meeting starts at 7:00 at the Eugene Science Center (formerly the Science Factory) planetarium.

(summary by Jerry Oltion)

EAS

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Annual Club Dues \$25

Meetings at 7:00 at the
Eugene Science Center



EAS is a proud member of the
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First Quarter Friday Report

Our First Quarter Friday for February was clouded and rained out, as was our Saturday backup date. Rats! (Yes, this is the exact same text as last month.) Our next First Quarter Friday will be on March 23rd.

First Quarter Fridays have been scheduled for 2018. The chosen dates are:

March 23 (40% lit)	April 20 (27% lit)	May 18 (15% lit)	June 15 (6% lit)
July 20 (60% lit)	August 17 (45% lit)	September 14 (29% lit)	October 12 (15% lit)
November 9 (5% lit)	December 14 (44% lit)		

February Meeting Report

Our February meeting featured a talk by Larry Deckman on the topic of "Celestial Parallels."

Larry focused on the idea of making people comfortable with the sky, introducing the sky as a form of celestial "wallpaper" which is relatively fixed and permanent, with the constellations as "the oldest cultural artifacts we have." He drew parallels between constellations at opposite times of year—winter/summer and spring/autumn—then demonstrated how the key constellations of each season can be found along the meridian every six hours throughout the year.

Larry started, appropriately, with the sky in February. The key constellation here on the meridian at 9 PM is Orion, who is seen near the great bull Taurus—the bull being a symbol of wealth in the ancient world. Contrasting to this is the dominant constellation pair of the summer sky, Ophiuchus (the Serpent-Bearer) and Serpens the Serpent. Here, the human figure is grappling with the animal with which he is associated, rather than benefitting from the association. The parallel exists beyond the figures represented by the constellations; the stars representing the two figures' heads lie exactly on the meridian (the north-south line that divides west



from east in the sky) at 9 PM in their respective seasons. Larry also pointed out that the two sets of constellations lie exactly 12 hours apart in the sky, making it possible to gauge the orientations of the constellations during the daytime.

Spring and autumn skies also contain such parallels. The spring sky is dominated along the meridian by the combination of Boötes the Herdsman (whose brightest star, Arcturus—the 4th-brightest star in the entire night sky—begins appearing above the horizon at night around the time of the Vernal Equinox) and the Big Dipper, the brightest portion of Ursa Major. By April 21st, again at 9 PM, the pointer stars of the Big Dipper (which lead toward the North Star, Polaris) lie directly along the meridian.

The autumn-sky parallel to Boötes and the Dipper is the pairing of Perseus the Hero and Pegasus. Larry sees the Great Square of Pegasus as the bowl of an even-larger dipper, its handle represented by the two starry strands of Andromeda. The two preceding stars of the Great Square, like those of the Big Dipper, point toward Polaris; like those of the Big Dipper, these two foremost stars of the Square lie directly along the meridian at 9 PM, but on October 21st. In both spring and autumn the dominant human figures reach toward their respective dippers, and again, these lie 12 hours apart in the sky and only six hours from the next season's pairing.

Knowing these constellation groups can allow an earthbound observer to know which constellations are prominent in the sky, day or night, at any time of year.

Thanks, Larry, for the intriguing discussion!

Two Meters Wide and 10,000 Feet High

By Jerry Olton

It pays to know people in high places. Kathy and I know two people who regularly observe atop Haleakala, the highest mountain on the Hawaiian island of Maui. One, Rob Ratkowski, works at Science City, the observatory there, and the other, Cindy Krach (whose amazing sketches you've seen in this newsletter before) is part of the Haleakala Amateur Astronomers, who have a clubhouse there.

Yes, they have a clubhouse at 10,000 feet. With heat. And plumbing. Yes, I am envious.

Haleakala is home to PanSTARRS, the all-sky survey telescope that looks for comets and asteroids, the TLR-4 Laser Ranging System that tracks satellites, the Zodiacal Light Observatory that studies solar phenomena, the upcoming 4-meter Daniel Inouye Solar Telescope, several military telescopes, and the 2-meter Faulkes Telescope North, one of a network of 26 research-grade robotic telescopes doing time domain science (i.e. the study of how astronomical objects change over time).

We had hoped for a night of observing with Cindy's and Rob's 12-inch scopes in the shadow of these enormous scientific instruments, but we had no idea that Rob was working behind the scenes to present us with an even more amazing treat: In anticipation of our visit, he got time on the 2-meter Faulkes. And not just research time, but actual observing time with an eyepiece in the equipment rack. The Faulkes is an outreach telescope as well as a scientific telescope, so that's not as unusual as it might seem, even though its usual form of outreach is in the form of remote-control data gathering. One of the Faulkes telescope's big advantages is that it can be controlled in real time, which Observatory Manager Mark Elphick and his assistant, JD Armstrong, did for us.

It was freezing cold up there at 10,000 feet and the wind was blowing, so we were cold even in our coats, ski pants, hats, and gloves, but it was totally worth it. Just seeing the scope was way cool. It's housed in a clamshell-style building that folds back and away from the scope, so at sunset it emerges like Botticelli's Venus on her half shell. The scope itself is impressive, too, its enormous bulk supported by steel tubes the size of my body and its secondary cage reaching high overhead against the darkening sky.

But nothing compared to actually looking through the scope. We used a 31mm Nagler eyepiece, which produced 645x and gave us a true field of view of about 7.6 arc-minutes. That limited us to fairly small targets, so our first was the Trapezium, the cluster of stars at the heart of the Orion Nebula. That alone filled a fair portion of the field.

As anyone who's gone observing with me knows, every time I look at the Trapezium, I have to see if I can spot the E and F stars, those extra two that lurk just outside the main four. So of course I looked for them in the Faulkes, and sure enough, there they were. But they weren't just visible; they were about as bright as 3rd magnitude stars in a more normal sized scope, and steady as rocks. I saw so many fainter stars there was no way to know which were the G and H and so on. I would have run out of alphabet labeling them all. The nebulosity around them was full of texture and seemed to have depth as well.

There were about 10 people observing with us, so we didn't get to linger long at the eyepiece. I tried to memorize the view, but it was just too rich. There were stars and nebulosity everywhere.

From there, we went to the small globular cluster NGC 1049 in Fornax. Surprisingly, that was kind of "Meh." It was just a small cluster and somewhat low in the sky, and the extra aperture didn't really seem to make much difference. It looked like M13 in a normal scope in soft seeing. But days later I realized what I had missed that night: we were looking at a cluster *in another galaxy*! It's 630,000 light-years away in the Fornax Dwarf Galaxy. And we were busting it into individual stars! I hereby revise my "Meh" to the second "OMG!" of the night.

From NGC 1049 we moved on to the Eskimo Nebula. The first person to look through the eyepiece said, "Oh, holy ****!" and every one of us afterward said something similar. It was spectacular! It was by far the most impressive telescope view of any planetary nebula I've ever seen. I could see the flattened oval of the Eskimo's face, the double chin, and filamentary detail in both the inner and outer rings. The central star was intensely bright and blue. Again, there was too much detail to soak in during my turn at the eyepiece, but the major elements are burned into my brain for the rest of my life.

The photo of me at the eyepiece captures exactly how I felt. That wide-eyed goofy grin was plastered on my face for hours. I couldn't believe I was actually there and looking through that scope!

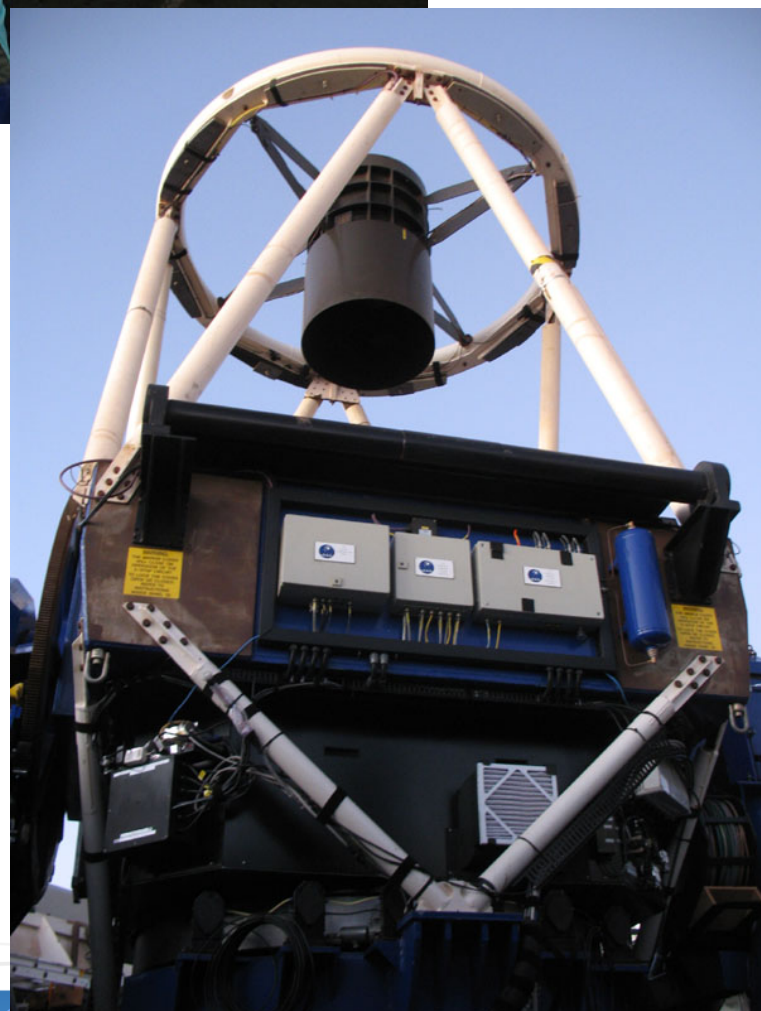
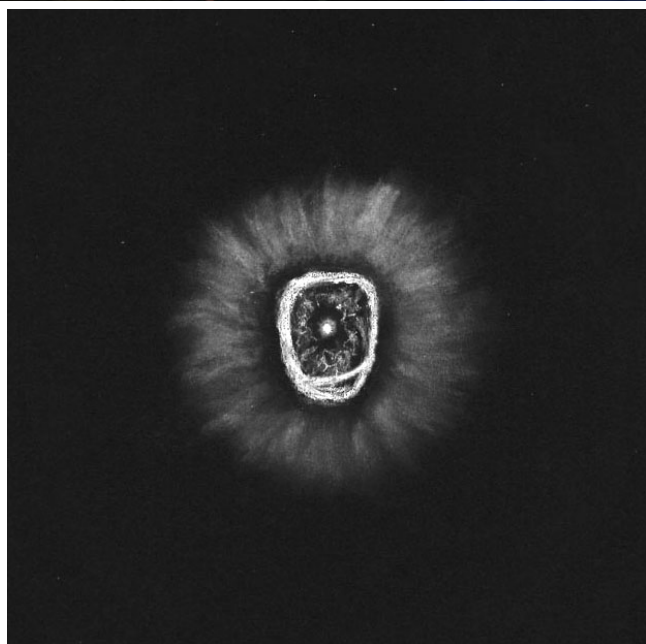
Our observing time was over before we knew it, but I think another object like the Eskimo Nebula would probably have made my head explode anyway. It was all I could think about the rest of the night, and all the next day.

The next night we went observing with a 12.5" scope and a pair of 100mm binoculars at La Perouse beach, and that was pretty cool, too. Actually, it was considerably warmer, which was nice, and the sound of the surf lapping gently on the rocks just a few dozen feet from us was very neat, too. We looked at the Eskimo again and I was pleased to see that we could make out some of the detail that we saw in the Faulkes now that we knew what to look for. I can't wait to really stare at it with my 20" scope and sketch every last detail I can pick up.

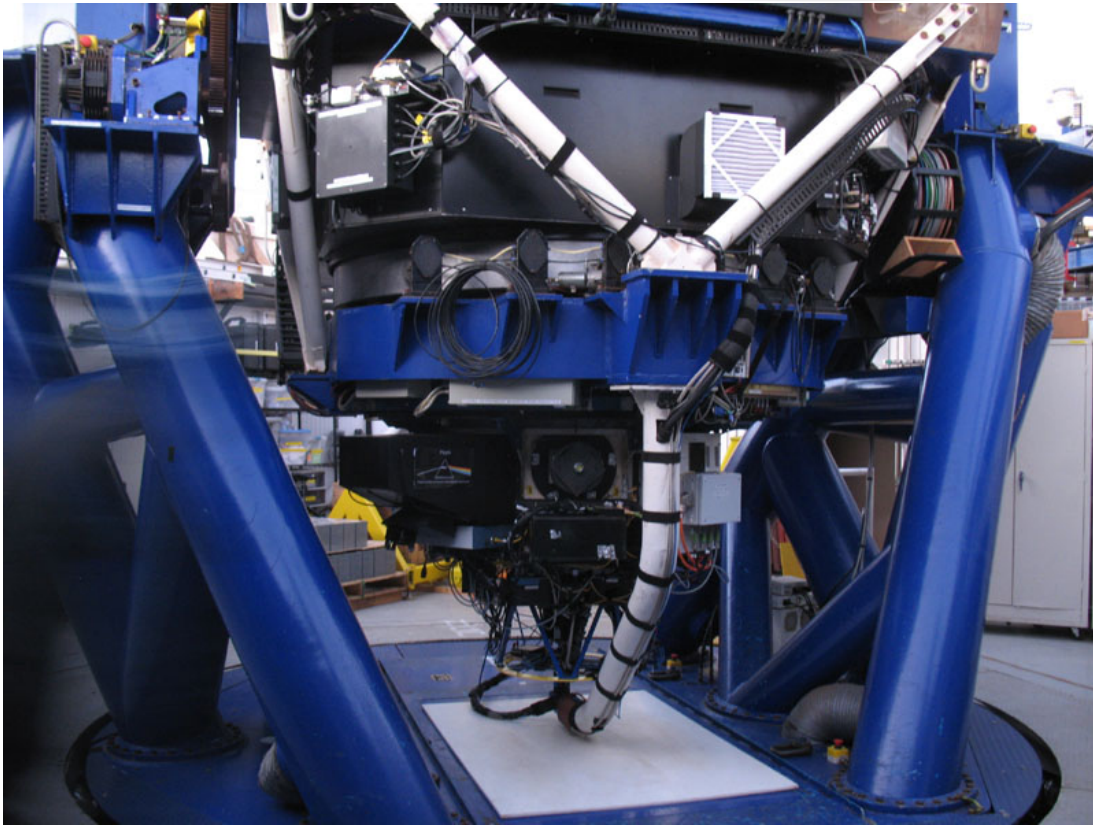
We saw many other cool things that night, including one I hadn't expected. I was spending all my time in the southern sky, looking at objects in Vela and Pictor and Dorado that we don't get to see from here, but I happened to turn around and look north -- and saw the Big Dipper rising. I had never seen that before! It's circumpolar in Oregon. But in Hawaii it rose straight up, bowl first and handle stretched out below it. That's one of the coolest things to watch! Once I noticed it happening I went back to it every few minutes until it had completely cleared the horizon.

Those are the two strongest images of my entire trip: the Eskimo Nebula through the 2-meter Faulkes and the Big Dipper rising. Not even the bikini-clad beach babes left a more memorable impression than those two events.

My deepest thanks to Rob Ratkowski and Cindy Krach for setting up both of these observing nights, to Mark Elphick and JD Armstrong for running the big scope, and to the Las Cumbres Observatory, parent organization for the Faulkes Telescope, for making the telescope available for our group of observers. Experiences like this take a lot of planning and cooperation by a lot of people, and I appreciate the effort put into this by everyone involved.



Top: Jerry and Kathy in front of the Faulkes telescope at sunset. Right: The top end of the Faulkes telescope. *Photos by Jerry Olton.* Above: The Eskimo Nebula as seen through the 2-meter Faulkes telescope. This is a compilation of impressions from several observers, sketched by Cindy Krach and tweaked a little by Jerry Olton.



Above: The bottom end of the Faulkes telescope. Right: Jerry at the eyepiece after viewing the Eskimo Nebula. *Photos by Jerry Olton.*





Above: The crescent Moon, February 13th. Below: Nearly-full Moon and clouds, February 2nd. *Photos by Alan Gillespie.*





Top: Comet PanSTARRS, January 13th. Below: The Pleiades. *Photos by Bill Basham.*



Local Group galaxy portraits. Top: M33. Bottom: M31, M32, and M110. *Photos by Bill Basham.*



Saturn, Mars, and Jupiter, February 23rd. *Photo by Alan Gillespie.*



The Eridanus Superbubble. *Sketch by Mel Bartels.*

Sun & Moon rise and set for March

Date	MoonRise	Moon Set	Twilight Begin	Sun Rise	Sun Set	Twilight End
3/1/2018	17:55	06:50	05:13	06:49	18:01	19:37
3/2/2018	19:07	07:24	05:12	06:47	18:02	19:38
3/3/2018	20:17	07:56	05:10	06:46	18:04	19:40
3/4/2018	21:24	08:26	05:08	06:44	18:05	19:41
3/5/2018	22:29	08:56	05:06	06:42	18:06	19:42
3/6/2018	23:32	09:26	05:05	06:40	18:07	19:43
3/7/2018		09:59	05:03	06:39	18:09	19:45
3/8/2018	00:32	10:34	05:01	06:37	18:10	19:46
3/9/2018	01:30	11:13	04:59	06:35	18:11	19:47
3/10/2018	02:23	11:57	04:57	06:33	18:12	19:49
3/11/2018	04:13	13:45	05:56	07:32	19:14	20:50
3/12/2018	04:58	14:38	05:54	07:30	19:15	20:51
3/13/2018	05:38	15:34	05:52	07:28	19:16	20:53
3/14/2018	06:14	16:34	05:50	07:26	19:18	20:54
3/15/2018	06:47	17:35	05:48	07:24	19:19	20:55
3/16/2018	07:17	18:39	05:46	07:23	19:20	20:57
3/17/2018	07:46	19:44	05:44	07:21	19:21	20:58
3/18/2018	08:14	20:50	05:42	07:19	19:23	21:00
3/19/2018	08:44	21:57	05:40	07:17	19:24	21:01
3/20/2018	09:15	23:06	05:38	07:15	19:25	21:02
3/21/2018	09:49		05:36	07:14	19:26	21:04
3/22/2018	10:28	00:15	05:34	07:12	19:27	21:05
3/23/2018	11:14	01:23	05:32	07:10	19:29	21:07
3/24/2018	12:07	02:28	05:30	07:08	19:30	21:08
3/25/2018	13:07	03:27	05:28	07:06	19:31	21:09
3/26/2018	14:13	04:20	05:26	07:04	19:32	21:11
3/27/2018	15:23	05:06	05:24	07:03	19:34	21:12
3/28/2018	16:35	05:46	05:22	07:01	19:35	21:14
3/29/2018	17:46	06:22	05:20	06:59	19:36	21:15
3/30/2018	18:56	06:53	05:18	06:57	19:37	21:17
3/31/2018	20:04	07:23	05:16	06:55	19:38	21:18

All times are for Eugene, Oregon Latitude 44° 3' Longitude 123° 06'



Thank you, Storage Junction

Storage Junction has donated the use of a storage unit for us to hold our loaner telescopes when they're not in use. EAS would like to thank Storage Junction for their generosity and support for our group. Please give them a call if you need a storage space, and tell your friends. Storage Junction is located at 93257 Prairie Road (at the intersection of Hwy 99 and Hwy 36, 3 miles south of Junction City) Phone: 541-998-5177



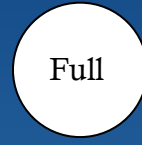
Observing In March



Last Q



New

1st Q

Full

Mar 9, 3:20 AM	Mar 17, 6:12 AM	Mar 24, 8:35 AM	Mar 31, 5:37 AM
Mercury Set: 7:39 PM	Mercury Set: 8:58 PM	Mercury Set: 8:39 PM	Mercury Set: 7:49 PM
Venus Set: 7:23 PM	Venus Set: 8:43 PM	Venus Set: 9:01 PM	Venus Set: 9:20 PM
Mars Rise: 2:18 AM	Mars Rise: 3:07 AM	Mars Rise: 2:58 AM	Mars Rise: 2:47 AM
Jupiter Rise: 11:32 PM	Jupiter Rise: 00:04 AM	Jupiter Rise: 11:31 PM	Jupiter Rise: 11:02 PM
Saturn Rise: 3:08 AM	Saturn Rise: 3:38 AM	Saturn Rise: 3:12 AM	Saturn Rise: 2:46 AM
Uranus Set: 9:21 PM	Uranus Set: 9:51 PM	Uranus Set: 9:26 PM	Uranus Set: 9:00 PM
Neptune lost in Sun	Neptune lost in Sun	Neptune lost in Sun	Neptune Rise: 6:06 AM
Pluto Rise: 4:00 AM	Pluto Rise: 4:29 AM	Pluto Rise: 4:02 AM	Pluto Rise: 3:34 AM

All times Pacific Standard Time (November 5, 2017 - March 10, 2018 = UT -8 hours) or Pacific Daylight Time (March 11 - Nov. 3, 2018 = UT -7 hours)

Items of Interest This Month

Zodiacal light prominent first half of the month after evening twilight.

Early March: Mercury and Venus visible near one another in evening sky

Mid-March: Mercury at its highest in the evening for this year

3/11 Daylight savings time starts. Car wrecks, heart attacks, and workplace injuries increase. Astronomers curse.

3/19 early morning: Mars lies between Lagoon and Trifid Nebulae. Great photo op!

3/20 Spring begins 9:15 AM

3/22 Moon just misses Aldebaran 2:30 – 3:30 PM. Good opportunity to see a star by day. Aldebaran is below Moon, closest to lit crescent at 3:12 (only 2 arc-minutes away). Happens high in southeast.

3/23 First Quarter Friday star party

3/29 Mars, Saturn, and M22 make close triangle in early morning.

4/1 & 4/2 Mars within half a degree of M22 in early morning. Saturn is just a little over a degree above them.

