IO - March 2024

Eugene Astronomical Society, PO Box 591, Lowell, OR 97452
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Annual Club Dues $25
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Additional Board members:
Dan Beacham, Amy Baker, Sylvia Collazo.
EAS is a proud member of The Astronomical League

Next Meeting Thursday, March 21st, 7:00 p.m.

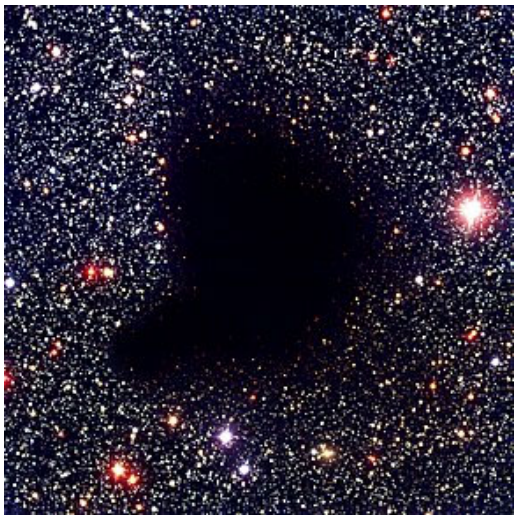
Dark Nebulae

by Robert Asumendi

Our March meeting will start with a "What's Up?" presentation by Jerry Oltion, who will give us a look at what we can expect to see when the winter clouds give way to the sunny skies of spring.

Then it's on to our main presentation on dark nebulae. There are clouds in space so dark they blot out all the starlight that enters. Is this a horrifying nightmare or a source of profound beauty for us to enjoy from the safety of our snuggly little planet? Join EAS president Robert Asumendi for part two of his ongoing lecture series: "Things That Look Way Better in Binoculars."

The meeting is at 7:00 on Thursday, March 21st at the Eugene Science Center planetarium, 2300 Leo Harris Parkway in Eugene (behind Autzen Stadium).



EAS T-Shirts

EAS has a new logo, and you can have it put on your very own T-shirt or sweatshirt. Coaches Athletic Supply, 3990 Roosevelt Blvd, Unit C (corner of Roosevelt and Bertelsen) has the logo on file. You can buy a shirt from them or provide your own and they'll print the logo on it for about $5. The standard size for a T-shirt is about 7 inches, but Coaches can enlarge or reduce the size and price accordingly. The logo can be in a variety of colors depending on the color of your clothing item.

Providing your own shirt could save you some money. Michaels on Gateway sells good quality shirts for under $5.

(Note that Baseball caps are currently not something Coaches can print on.)

February Meeting Report

Telescope Workshop, Swap Meet, and General Get-Together

We usually do our telescope workshop in January, but the ice storm nixed that. So we held it in February instead. It was a lively meeting with a couple dozen people in attendance. We had several tables full of items for the swap meet, including two tables full of books and charts. Several telescopes and eyepieces changed hands, and a lot of books went home with people, too.

Two people brought telescopes to get help learning how to use them. Both got the help they needed, and expressed interest in joining the club.

Conversation abounded all night, too. It was a great chance to meet with other club members and kvetch about the ice storm and all the cloudy weather that kept us from observing for most of the month beforehand.

Next First Quarter Friday: March 15th

No surprise: Our February First Quarter Friday star party was clouded out, as was a Saturday gig at the planetarium. Sigh.

If a miracle happens, our next First Quarter Friday star party will be March 15th. We hope to hold it at the College Hill Reservoir as usual, but we don't know EWEB's schedule for starting work on the reservoir removal, so it's possible we'll have to find another venue. Keep an eye on our email list for updates.

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. The reservoir won't be around much longer, so come enjoy it while you can.

Here's the schedule for 2024. Star parties start at dusk or 6:00, whichever is later. (7:30 on 3/15). This schedule is tentative, given the upcoming closure of the College Hill Reservoir and the uncertainty of where we'll be holding our star parties in the months to come.

March 15 (Moon 39% lit)
April 12 (23% lit)
May 17 (74% lit)
June 14 (59% lit)
July 12 (42% lit)
August 9 (27% lit)
September 13 (79% lit)
October 11 (64% lit)
November 8 (48% lit)
December 6 (33% lit)

The most likely date for our Dexter dark-sky star party is July 27th.

Welcome New Members!

EAS welcomes four new members this month: Kevin Dobbs, Larry Folenious, Bill Allison, and Rob DeGeorge. Welcome to the club! We hope to get to know you and help you enjoy the night sky with us.

February Observing Report

Despite having two star parties clouded out this month and only half a dozen clear nights, EAS members had two memorable outings. We finally had a Solar star party, albeit on a Saturday since our usual Sunday was forecast for more clouds. Dan Beacham, Robert Asumendi, Jerry Oltion, and Larry Folenius set up solar scopes in Alton Baker Park on Saturday the 10th. There were still some clouds, but they had quite a few gaps between them. We had a pretty good crowd, maybe two dozen people in all. There were several good sunspots and one nice promenence, plus some filmaments. We just missed an X-class flare, though. Dan saw the tail end of it from his driveway after he got home.

The weekend before, on Saturday the 3rd, several EAS members had a good night at the Amphitheater site on Eagle's Rest Road. It was a busy night for traffic, though; cars kept coming by all night long. Some people stopped to ask what we were up to, and two groups joined us for an impromptu star party.

One of the pickups that stopped had a man and a woman in it, and they were on a mission to retrieve a bus they'd parked up the road another mile or two after it had run out of gas. They asked Jerry where they might find a place to park it more permanently, or at least turn it around, and he gave them directions to the gravel storage site 6.7 miles up from the bottom. They went on up and we didn't think much more about it.

We began to dew up a little before midnight, so most of us packed up and headed home, but Andy Nowlen was getting some good data with his astrophotography rig so he stayed put. But not long afterward, he noticed a strange set of lights coming down the road from above. It was a pickup truck leading the way while a huge set of tail lights followed behind very, very slowly.

It was the bus. And not just a school bus, as Jerry had assumed. It was a full-sized city transit bus, complete with fanfold doors in back. The bus stopped next to Andy and the driver shut off the engine and got out to talk. They had hoped to find a place to park and camp out, but they either couldn't find it or couldn't fit into the spot, and couldnt find any place to turn it around, either. So they were forced to back the bus all the way down the hill.

After visiting with Andy for a while, the driver tried to restart the bus but the battery was dead, so the pickup driver pulled inbetween the bus and Andy's camper to give it a jump start. Rather than follow the bus all the way down to the bottom of Eagle's Rest Road, Andy packed up his gear and headed out first.

Loren Reimers went up there the next day to see if they'd made it out, and they apparently had. No bus was evident, anyway. What a nightmare that must have been for the owners of that bus, though. We all felt bad for them. (But can you imagine the telescope that bus could carry?)

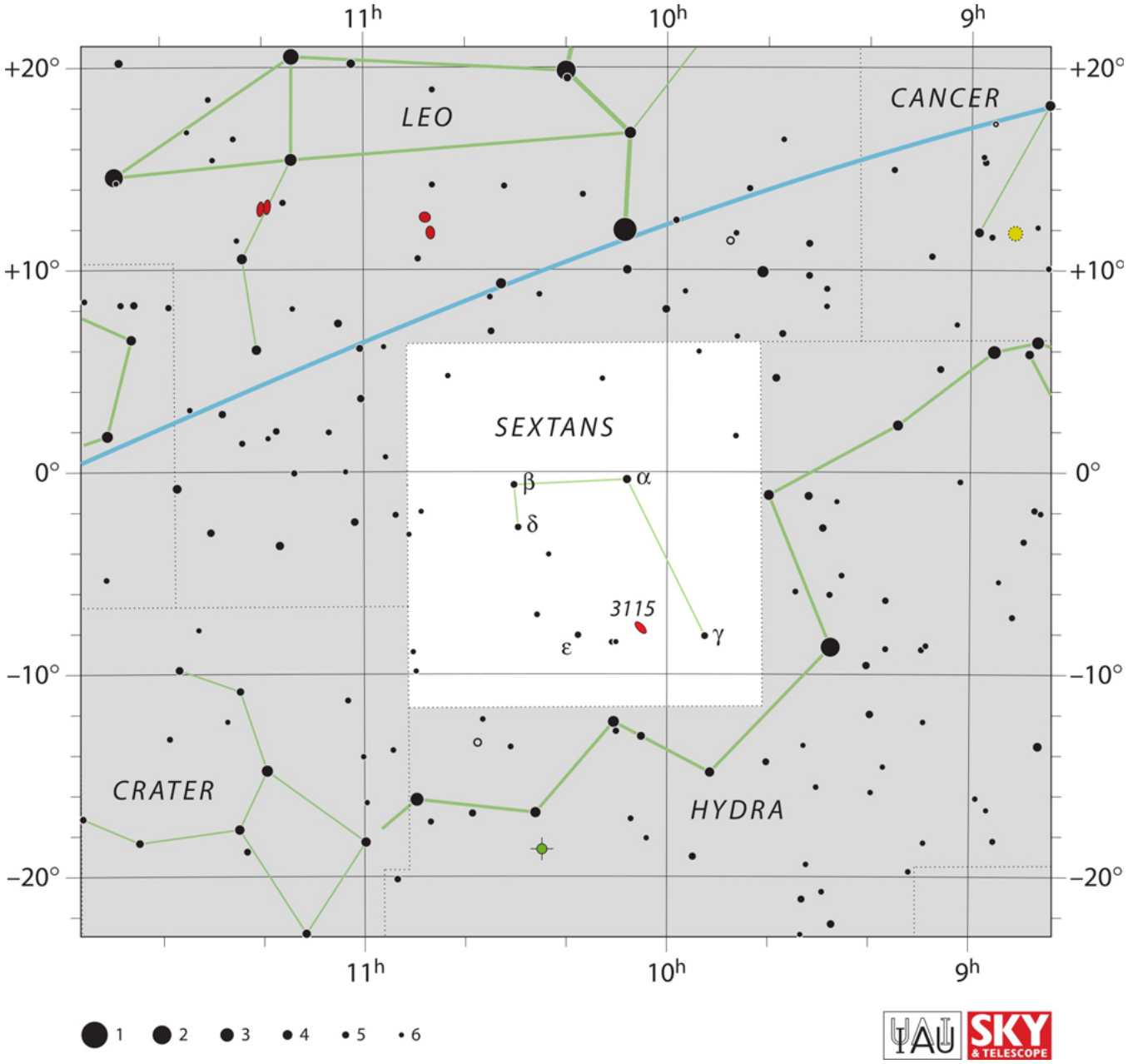
Photo © by Andy Nowlen

Constellation of the Month: Sextans

by Andy Edelen

From a couple of bright, well-known constellations to one that's dimmer and more difficult. Lying away from the dwindling winter Milky Way, the constellation Sextans isn't anyone's idea of an easy region of the sky to explore. The Sextant appears nearly barren to the naked eye, and yet the constellation is a fine hunting ground for galaxies — some of them much more impressive than you might expect for such an obscure location.

Sextans is well-positioned for observers in both hemispheres, as it lies along the Celestial Equator (along which which Orion's Belt also runs). It's a surprisingly large constellation, covering 317 square degrees, ranking it 47th out of the 88 constellations. Only five of its stars have Greek letter names, and only one — 4.5-magnitude Alpha Sextantis — is brighter than 5th magnitude. This is truly a constellation for



Sextans, as seen in modern star charts. Image courtesy IAU/*Sky & Telescope*.

dark-site observing; our naked-eye challenge this month is to simply to locate the star pattern of Sextans as seen in the IAU/*Sky & Telescope* chart on the previous page. Just seeing Alpha (α), Beta (β), and Gamma (γ) Sextantis from a non-rural site is triumph enough!

Sextans was not one of the original 48 constellations of Ptolemy, and has little mythology associated with it; it's likely to have been included in neighboring Hydra with regard to the star-lore of most cultures. (Only the Chinese have a documented figure specifically for the constellation, although the actual member stars aren't known: this is *Tianxiang*, the Celestial [Prime] Minister.) The modern constellation was created in 1687 by the redoubtable Polish astronomer Johannes Hevelius — it was one of seven constellations Hevelius created to "fill in" the spaces on his atlases. The constellation's original name was Sextans Uraniae, and it commemorated his favorite observing instrument (which was lost in a fire at his observatory in 1679). John Flamsteed would shorten the constellation's name to its current state in 1725; none of the constellation's stars were given names or identifying numbers, however, until 1879. This is especially curious, given that Sextans lies close enough to the ecliptic plane that the Moon and planets occasionally traverse the constellation's borders.

Sextans contains a particular piece of EAS lore, as well. Our binocular target for this month lies in the northeast corner of the constellation, roughly 30' (1/2°) east of the 6.1-magnitude star 35 Sex (...yeah, I know). This is an asterism — a group of unrelated stars forming a specific visual pattern — known as **Rinnan's Run**, after EAS's own Dan Rinnan. Dan discovered this while observing with Jerry Oltion, who suggested the asterism's popular name to Sue French for one of her *Sky & Telescope* columns.

But what is Rinnan's Run? It's a 2.5-degree-long string of stars in a straight line, angled NNW-SSE, and a perfect target for the field of view of a pair of modest binoculars; this is helped by the fact that many of the stars are in the 8th/9th-magnitude range (which is perfect for binoculars and finderscopes). The stars in the asterism are more heavily-condensed toward the southern end, where more of the fainter stars congregate. Two westward-extending branches lie toward the line's southern end as well.

Googling "Rinnan's Run" turns up not only observation records, sketches, and discussion of Dan's asterism, but also a short, peculiar piece of German techno music named after the asterism: (https://soundcloud.com/technicolorsounday/rinnans-run).

Sextans's great deep-sky showpiece lies about 9.5 degrees east of second-magnitude Alphard (Alpha Hydrae), twenty degrees due south of Regulus (Alpha Leonis), or just under five degrees NNW of 3.6-magnitude Lambda (λ) Hydrae. This is **NGC 3115**, sometimes known as The Spindle Galaxy, and one of the brightest non-Messier galaxies in the spring sky. It's an easy target for almost any optical aid, showing even in 7x binoculars as an elongated silvery glow.

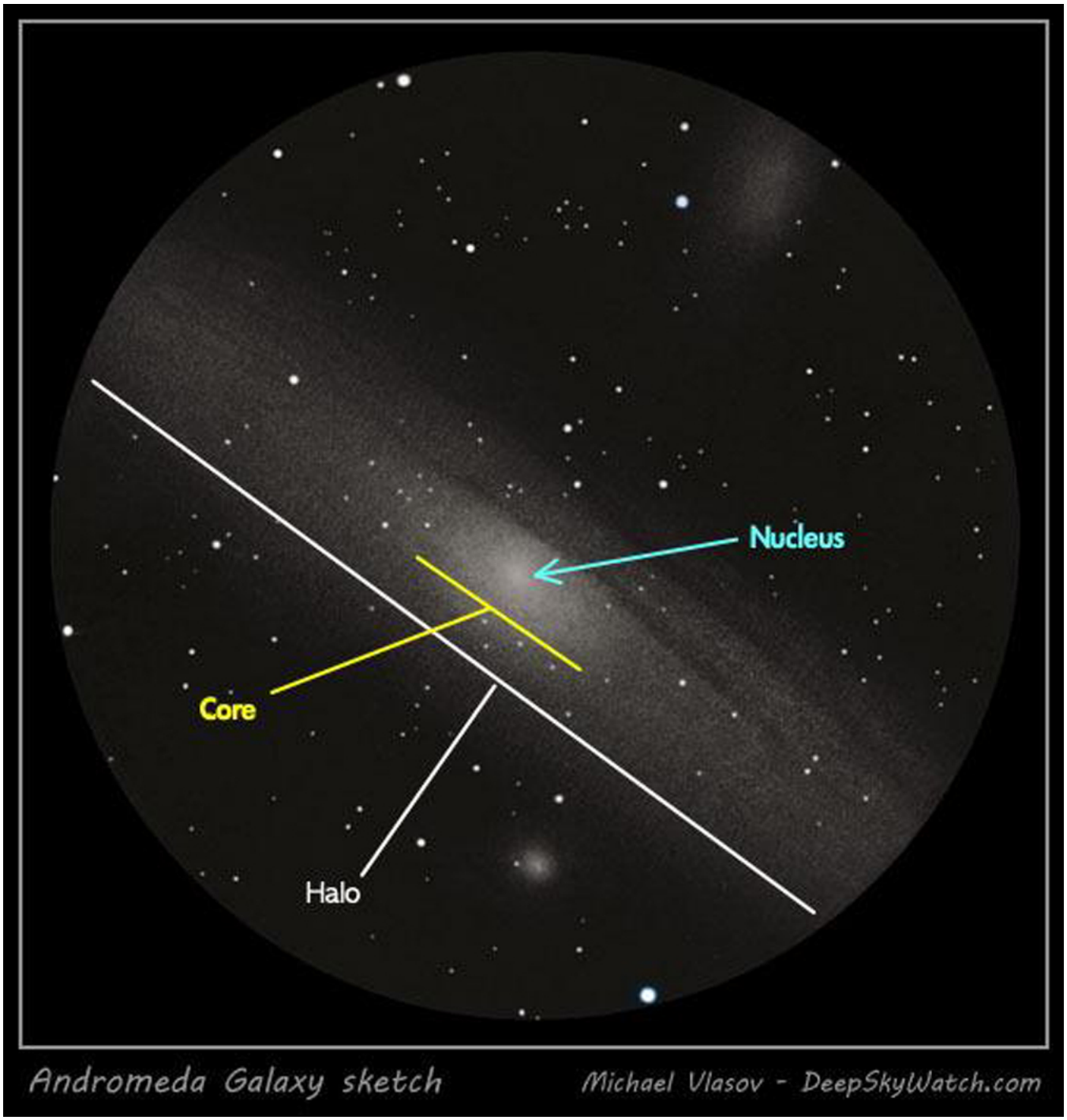
NGC 3115 is sometimes classified as an elliptical galaxy, but it's more-commonly considered an "armless spiral" or lenticular galaxy. These are intermediary types between ellipticals and spirals: they have no spiral arms or components of star-forming regions, but have the spherical central region and flattened outer disk of a spiral galaxy. NGC 3115 is one of the most-famous galaxies of the type, lying only 32 million light-years away.

In a 2-inch scope, the galaxy spans 3' x 1', and in good conditions shows both a tiny stellar nucleus and a sharp, thin core. This strongly resembles its appearance in larger telescopes, although the galaxy will appear larger with greater aperture. To find this lens-shaped cosmic island, move just about four degrees north of Lambda Hydrae to the 5.6/5.9-magnitude pair of 18 and 17 Sextantis; these two stars will be obvious in binoculars or finderscopes. About a degree due northwest of those two stars is another pair, of magnitudes 6.6 and 7.7. The galaxy lies due west of the 6.6-magnitude star by a little over a half-degree. (Alternatively, the galaxy lies about a third of the way [and a little bit east] from Lambda Hydrae to Iota [ι] Hydrae.)

So what's all this stuff about haloes, cores, and nuclei? When we look at a galaxy in the eyepiece, there are three primary components that we can see. The halo spans the visible extent of the galaxy, from edge to edge; haloes usually fade away into the darkness of the sky background, or they have an abrupt

edge (we say they're "well defined" in the latter case) or some combination of the two. Visible spiral arms, like those of M51 or M101, are considered part of the halo. The core is a brighter central region, which is analogous to the central bulge we see in a spiral galaxy; the Milky Way's core is seen from Earth as the Great Sagittarius Star Cloud. Some galaxies have very prominent cores that make up much of the galaxy's interior; others have a barely-perceptible core, whether large or small, that's only a shade brighter than the halo itself. Sometimes it's easy to note where the core begins and the halo ends; the core itself is "well defined" in these cases. And some galaxies show nothing *but* a halo.

A galaxy's nucleus, if visible at all, is usually in the center of the halo (or core, if there is one). The nucleus may be very faint, or absent altogether. Sometimes it takes high power to make a faint nucleus



The nucleus, core, and halo of The Andromeda Galaxy, as seen in the eyepiece. Sketch by Michael Vlasov.

visible. Galactic nuclei are usually either described as "stellar" (i.e. they appear as a point, like a star) or "substellar/quasi-stellar," in which case the nucleus doesn't come to a precise point but rather looks to have measurable size, like the disk of Neptune. In some cases, it can be difficult to discern if a galaxy has a substellar nucleus or just a tiny, bright core region; face-on spirals often present this dilemma.

Looking for halo-core-nucleus structures in galaxies is a good way to improve your observing — by trying to eke out these details, you're training your eye (and your brain) to detect them, and to identify differences between *this* galaxy and the last one you looked at…and the *next* one!

Six and a third degrees east of NGC 3115 is one of Sextans' best multiple stars, **Struve 1441**. A fine target for a mid-sized refractor at medium power, ∑1441 (the ∑ indicates that the star is one of the discoveries of Friedrich Struve, patriarch of the great Struve astronomy dynasty) is a triple star of 6.5, 8.8, and 10.1 magnitude components. The AB pair (the 6.5 and 8.8) are separated by a small-but-separable 2.8 arcseconds, and will require about 150x to split in a 4-inch scope. The C star, the 10.1-magnitude star, lies a whopping 62 arcseconds — more than an arcminute — to the northwest of the A component. The A component (remember, the A component in a multiple-star system is usually the brightest) appears a bright orange, with a spectral type of K; the B component is a soft yellow, while the C component is described as being somewhere between the two, color-wise. What color do you see in the C star?

As already noted, most of Sextans's deep-sky objects are galaxies; many of these are particularly fine objects, and some are members of pairs or groups. One especially fine pair of these is the **NGC 3166/3169** pair in north-central Sextans: two similar galaxies separated by less than 8', a pair of phantasmic eyes staring back from the darkness of an eyepiece field.

NGCs 3166 and 3169 are not visibly interacting in the eyepiece view, despite their apparent proximity in space; they're roughly as distant from each other as the Milky Way is from the Andromeda Galaxy. In photographs, however, the galaxies' spiral arms are already becoming entangled. In several million years, the view of this pair will look very different, as they begin an inevitable merger that will leave one large, temporarily-active galaxy where two normal spirals had once been.

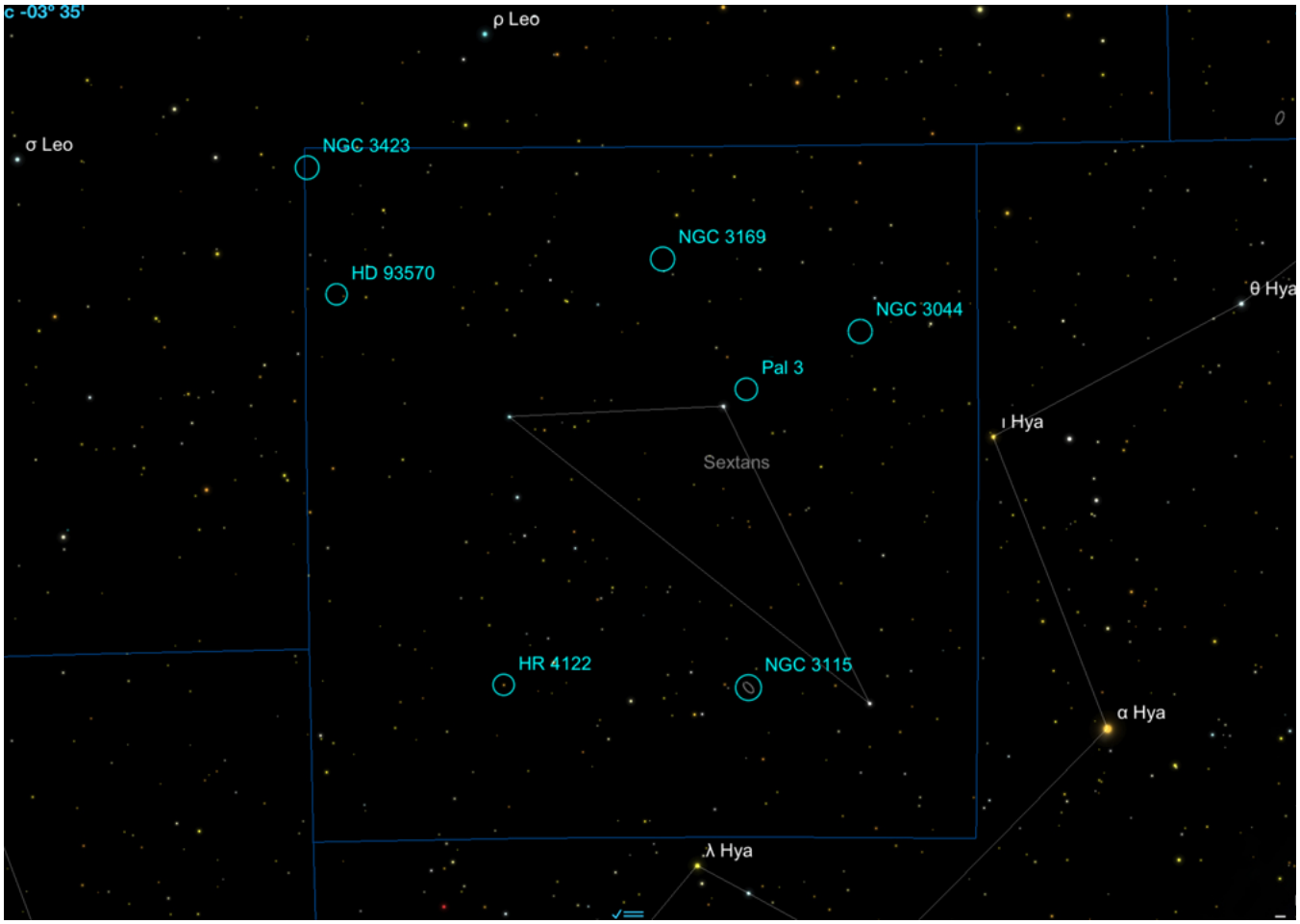
In a 6-inch telescope, the two galaxies have very similar appearances. NGC 3169 is slightly larger and has a small, slightly brighter core; NGC 3166 has an obvious stellar nucleus at its center, but no core. The interacting arms are nowhere to be seen. (Larger telescopes will reveal that both galaxies have visible cores and nuclei, but this may take a scope of 12-inch or greater aperture.) A large telescope will also reveal the presence of a third galaxy, NGC 3165, 4.5' southwest of NGC 3166; this galaxy is a very faint, featureless glow half the size of its larger neighbors, and requires a 14-inch scope for a convincing view.

NGCs 3166 and 3169 were discovered by William Herschel in December of 1783. The great British observer Admiral William H. Smyth, one of the most colorful of all astronomy writers, wrote in 1844 of the pair that "This object is on or near the spot where the Capuchin, De Rheita, fancied he saw the napkin of [Saint] Veronica, in 1643…. It would be much easier to ascribe this strange discovery to a heated imagination, than to deliberate falsehood; but it so happens unfortunately that there is no staring cluster or nebula near…. In craving permission to doubt his assertion, Sir John Herschel's words may be applied: 'Many strange things were seen among the stars before the use of powerful telescopes became common.'"

(Anyone wishing to read some of the most eccentric and wonderful writing in astronomy should pick up Smyth's *The Bedford Catalogue*, Volume Two of his larger *A Cycle of Celestial Objects*; few writers of any era had the wit, enthusiasm, and descriptive prowess of the old Admiral, and his writing is a glorious flashback to the European Enlightenment. His double star color descriptions alone are priceless.)

To find this cosmic two-fer, draw a line from Gamma Sextantis through Alpha Sextantis and extend this line another half of its length. The galaxies will be just slightly west of that point.

A number of Sextans galaxies are available for scopes of the 8-inch variety; one of the larger ones is **NGC 3423**, an impressive face-on spiral way up in the northeast corner of Sextans, near the constellation's border with Leo — in fact, the nearest naked-eye star is 6th-magnitude 56 Leonis (1.25 degrees to the east-northeast).



This month's highlight objects in Sextans. ∑1441 is labeled HR 4122 here; Rinnan's Run is plotted as the star HD 93570. Image rendered in *SkySafari 5*.

NGC 3423 is a classic "grand design" spiral, one whose symmetry and "texture" make it a prototype of the spiral class. This can be seen in the eyepiece; the galaxy appears as a 3' x 1.5' glow of somewhat low surface brightness, with a small, faint core region. It has a very similar appearance to M74 in Pisces or M101 in Ursa Major (though of course much smaller due to distance), and this appearance in the eyepiece leaves little doubt about what type of galaxy it is. An 11.5-magnitude star lies 2.5' to the northeast.

The galaxy forms an isosceles (almost-) right triangle with the stars 58 and 59 Leonis, lying almost due west of 59 Leo.

What would NGC 3423 look like if it was turned 90° to our perspective? It'd probably look a lot like **NGC 3044**, our target for 10-inch scopes. NGC 3044 is a flat galaxy (see also our November 2022 *Io* for information on these), and a terrific example of the type. Flat galaxies are one of my favorite types of object; there's something startling about seeing a thin, straight sliver of gossamer light — often at the limits of the eye's capability — as it drifts into the field of view. (Flat galaxies differ from basic edge-on spiral galaxies in that they have no round or spherical central region.) In my 12.5-inch scope, the galaxy was not particularly easy, but was large — 4.0' x 0.3'—and was irregularly bright along its major axis, with the galaxy's western end fading away into the background sky. Kepple & Sanner's *Night Sky Observer's Guide* describes the galaxy as 3' x 0.5' in a 10-inch scope; no core or nucleus are present, although the center of the galaxy is subtly brighter than the halo.

NGC 3044 is located just slightly over halfway between Alpha Hydrae (Alphard) and Alpha Leonis (Regulus). More precisely, it forms a squat, nearly-isosceles triangle with Alpha Sextantis and Iota Hydrae, and is about 40% of the way from Alpha Sextantis to 4.6-magnitude 2 Sextantis.

Our final object this month isn't a galaxy at all. **Palomar 3** is a thoroughly-out-of-place globular cluster whose location — ¾ of a degree northwest of Alpha Sextantis — *should* make it easy to locate. But we've talked about the Palomar globular clusters before: some of the fifteen members of the Palomar list are among the more-difficult globulars visible to Northern Hemisphere observers. Palomar 3 is no different.

There are two primary reasons for the Palomar clusters to be so difficult (all but one were discovered on the Palomar Observatory Sky Survey plates taken in the 1950s): they are heavily obscured by dust in the plane of the Milky Way, or they're enormously far away. (Or both.) Palomar 3 is a whopping 302,000 light-years away from us, and 313,000 light-years from Galactic Center. That's almost three times the estimated diameter of the galaxy itself, and twice as far as our satellite galaxies, the Magellanic Clouds!

Due to this distance, Pal 3 doesn't even look like a globular cluster in photographs. The redoubtable German amateur astronomer Uwe Glahn found the cluster somewhat easy in a 14.5-inch scope under "perfect" conditions but invisible in a 16-inch under slightly-less optimum skies; I've been skunked on all three of my attempts at Palomar 3.

Palomar 3 will require a large telescope, a dark site, and excellent sky transparency to track down — if the marine layer is at all present, it might be best to look for Pal 3 another night. Even then, the cluster will appear only as a difficult, diffuse glow, rather like a faint galaxy, no bigger than 1.5'. A 13.5-magnitude star lies just outside the cluster's glow to the west-southwest. Use medium power once you find the field; too low, and you may not notice the cluster due to its small size (it's second-smallest of the Palomars); too high, and you risk having the sky background too dark. Once you've found the cluster, bump the magnification up to darken the background and increase the contrast — too much power, though, and the cluster will disappear.

Sextans is proof, if any more was needed, that a faint, obscure constellation to the naked-eye might be abounding in cosmic wonders. There's something here for everyone and every size of optical aid; we've barely begun to plumb the constellation's deep-sky depths. Having explored neighboring Hydra in previous installments, take some time to practice your starhopping and triangulation skills in this overlooked corner of the cosmos.

Remember Calendars!

Remember that club members can purchase *Astronomy* magazine's Deep Space Mysteries calendars at a 50% discount. Go to https://mysciencesshop.com/product/calendar/68209. On checkout enter the code CAL50 to receive the 50% discount. ($6.50 this year, with free shipping)

Dues are Past Due!

EAS membership runs from October thru September. If you haven't renewed already, please bring your payment to the next meeting or mail your dues to the Eugene Astronomical Society, PO Box 591, Lowell, OR 97452. Dues are still the same low $25 they've been for years. Make your checks payable to Eugene Astronomical Society, or just EAS if your pen is low on ink.

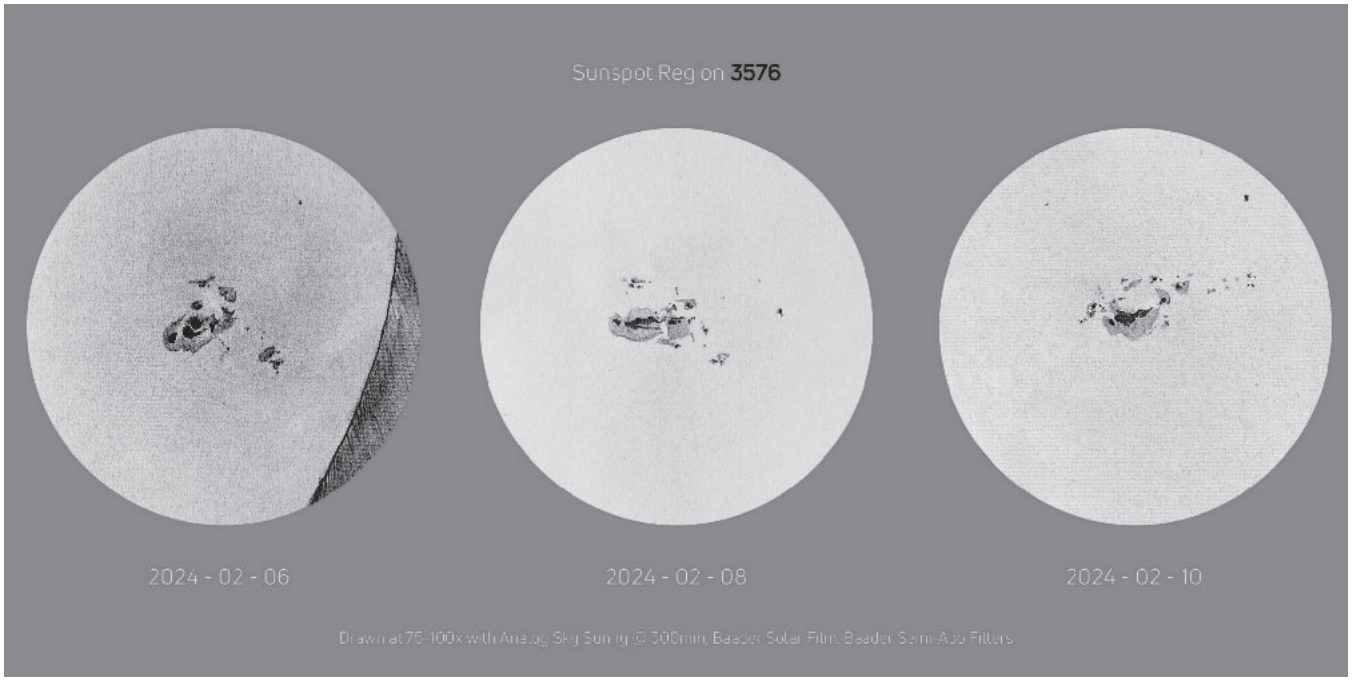
Telescope Lending Library

Need a bigger telescope to check out all the objects Andy writes about? The EAS has several scopes available for members to borrow. Check out the telescope lending page on our website to see the many scopes in our lending program, and contact Dan Beacham, our lending coordinator, to arrange to check out one of these excellent scopes.

Dan can be reached via email at beachamd (at) yahoo.com or by phone at 541-232-3584.

Gallery

February was another cloudy month, but several club members managed to take some excellent astrophotos. Some were taken through new equipment: Robert's new "Sunny" solar binoscope, the fully automated ASI SeeStar, which tracks and stacks images on the fly, and the Vaonis Hestia, which uses the viewer's cell phone camera as the image sensor. The more traditional astrophotos also benefit from new equipment and new software. The innovations keep coming. Zoom in a bit and enjoy!



Robert Asumendi has been sketching the Sun every chance he gets, using his new "Sunny" solar filtered binocular telescope. Here's a montage showing the evolution of a sunspot from February 6th – 10th. Note that these images don't show the entire Sun. The sunspot was big, but not that big! Sketches © by Robert Asumendi.

Ken Marrtin shot these photos of the Sun and the Moon through his new fully automated Hestia telescope, using his cell phone camera as the imaging device. Photos © by Ken Martin.

New club member James Bond took these images of the Moon and the Orion Nebula on February 18th through his ASI SeeStar, another fully automated astrophotography and EAA (Electroniscally Assisted Astronomy) setup. Note that the club owns one of these scopes now, and it's in the lending library. Photos © by James Bond.

James took this photo of NGC7635, the Bubble Nebula, with more conventional equipment (an 80mm Orion telescope with ZWO CMOS camera, field flattener, and filters.) Photo © by James Bond

Andy Nowlen took this image of IC 410, the Tadpole Nebula, using data he gathered in early February at the Amphitheater combined with data taken in December at our Linslaw site. Photo © by Andy Nowlen.

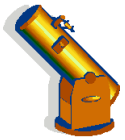
Enzo Carlos caught a clear night early in the month to take this fabulous image of the Flame, Horsehead, Running Man, and Orion Nebula all in the same frame, using a Canon 6D camera on a tracking mount. Photo © by Enzo Carlos.

Alan Gillespie caught the waxing crescent Moon on February 13th. Photo © by Alan Gillespie.

Wes Magyar took this image of IC 443, the Jellyfish Nebula, on the full Moon weekend of February 24th from his back yard in Florida, proving that light pollution doesn't have to shut you down if you use the right filters.
Photo © by Wesley Magyar

Alan Gillespie took this image of the Full Moon on February 24th. Photo © by Alan Gillespie.

Wes Magyar took this image of M51 on the same moonlit weekend as the Jellyfish photo above. Photo © by Wesley Magyar.



Observing in March 2024

Last Q | New | 1st Q | Full

Mar 3, 7:23 AM	Mar 10, 2:00 AM	Mar 17, 9:11 AM	Mar 25, 0:01 AM
Mercury lost in Sun	Mercury Set: 8:07 PM	Mercury Set: 8:48 PM	Mercury Set: 9:13 PM
Venus Rise: 5L43 AM	Venus Rise: 6:49 AM	Venus Rise: 6:43 AM	Venus Rise: 6:34 AM
Mars Rise: 6:29 AM	Mars Rise: 6L30 AM	Mars Rise: 6:16 AM	Mars Rise: 6:00 AM
Jupiter Set: 11:03 PM	Jupiter Set: 11:42M	Jupiter Set: 11:22 PM	Jupiter Set: 10:59 PM
Saturn lost in Sun	Saturn lost in Sun	Saturn Rise: 6:56 AM	Saturn Rise: 6:27 AM
Uranus Set: 11:45 PM	Uranus Set: 00:23 AM	Uranus Set: 11:53 PM	Uranus Set: 11:23 PM
Neptune Set: 7:07 PM	Neptune Set: 7:41 PM	Neptune lost in Sun	Neptune lost in Sun
Pluto Rise: 5:14 AM	Pluto Rise: 5:47 AM	Pluto Rise: 5:20 AM	Pluto Rise: 4:49 AM

All times Pacific Standard Time (November 5, 2023 – March 9, 2024 = UT -8 hours) or Pacific Daylight Time (March 10 – Nov 3, 2024 = UT -7 hours)

Date	Moon Rise	Moon Set	Twilight Begin	Sun Rise	Sun Set	Twilight End
3/1/2024		09:12	05:12	06:48	18:02	19:38
3/2/2024	00:44	09:41	05:11	06:46	18:03	19:39
3/3/2024	01:54	10:18	05:09	06:45	18:04	19:40
3/4/2024	03:01	11:08	05:07	06:43	18:06	19:41
3/5/2024	04:02	12:11	05:05	06:41	18:07	19:43
3/6/2024	04:53	13:26	05:04	06:40	18:08	19:44
3/7/2024	05:34	14:49	05:02	06:38	18:09	19:45
3/8/2024	06:06	16:14	05:00	06:36	18:11	19:47
3/9/2024	06:32	17:38	04:58	06:34	18:12	19:48
3/10/2024	07:56	20:01	05:56	07:32	19:13	20:49
3/11/2024	08:17	21:23	05:55	07:31	19:14	20:51
3/12/2024	08:40	22:44	05:53	07:29	19:16	20:52
3/13/2024	09:04		05:51	07:27	19:17	20:53
3/14/2024	09:33	00:04	05:49	07:25	19:18	20:55
3/15/2024	10:08	01:23	05:47	07:23	19:19	20:56
3/16/2024	10:52	02:35	05:45	07:22	19:21	20:58
3/17/2024	11:45	03:39	05:43	07:20	19:22	20:59
3/18/2024	12:46	04:31	05:41	07:18	19:23	21:00
3/19/2024	13:51	05:12	05:39	07:16	19:24	21:02
3/20/2024	14:57	05:43	05:37	07:14	19:26	21:03
3/21/2024	16:03	06:08	05:35	07:13	19:27	21:05
3/22/2024	17:07	06:29	05:33	07:11	19:28	21:06
3/23/2024	18:10	06:47	05:31	07:09	19:29	21:07
3/24/2024	19:13	07:04	05:29	07:07	19:31	21:09
3/25/2024	20:16	07:20	05:27	07:05	19:32	21:10
3/26/2024	21:20	07:36	05:25	07:03	19:33	21:12
3/27/2024	22:26	07:55	05:23	07:02	19:34	21:13
3/28/2024	23:34	08:16	05:21	07:00	19:35	21:15
3/29/2024		08:43	05:19	06:58	19:37	21:16
3/30/2024	00:44	09:17	05:17	06:56	19:38	21:18
3/31/2024	01:52	10:01	05:15	06:54	19:39	21:19

Begin Daylight Saving Time

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

Items of Interest This Month

Best month of the year to see Mercury (toward end of month).

March is also good for seeing the Zodiacal Light during the dark phase of the Moon.

3/9 & 10: Best time for a Messier Marathon.

3/13 Moon and Jupiter within 3°. Maybe possible to see Jupiter by day.

3/14 Io shadow transit 8:40 – 10:50 PM.

3/15 First Quarter Friday star party.

3/17 Europa shadow transit 7:37 – 9:59 PM.

3/18 Moon eclipses Upsilon Geminorum 7:20 PM (just before sunset). Reappears 7:59 PM

3/19 Vernal equinox 8:06 PM.

3/21 Venus and Saturn within 1/2° before dawn.

3/24 Mercury at its best, 19° east of Sun.

Also on the 24th: A penunbral lunar eclipse from 10:00 PM – 2:30 AM. Greatest eclipse 00:13 AM 3/25. This will just be a dimming of the Moon, not a complete darkening, but it's a fairly deep penumbral exlipse so it should be pretty noticeable.

3/26 Moon near Spica as they rise ~9:30 PM.

3/30 Moon occults M4 ~5:00 – 6:00 AM.
Io shadow transit 7:00 – 9:10 PM.

4/1 Ganymede shadow transit 7:43 – 9:23 PM.