

MONTHLY OBSERVER'S CHALLENGE

Las Vegas Astronomical Society

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&

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With special assistance from:

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FEBRUARY 2017

Introduction

The purpose of the Observer's Challenge is to encourage the pursuit of visual observing. It's open to everyone that's interested, and if you're able to contribute notes, and/or drawings, we'll be happy to include them in our monthly summary. We also accept digital imaging. Visual astronomy depends on what's seen through the eyepiece. Not only does it satisfy an innate curiosity, but it allows the visual observer to discover the beauty and the wonderment of the night sky. Before photography, all observations depended on what the astronomer saw in the eyepiece, and how they recorded their observations. This was done through notes and drawings, and that's the tradition we're stressing in the Observers Challenge. We're not excluding those with an interest in astrophotography, either. Your images and notes are just as welcome. The hope is that you'll read through these reports and become inspired to take more time at the eyepiece, study each object, and look for those subtle details that you might never have noticed before.

h-3945 Winter Albireo – Double Star In Canis Major

Despite the fact that thousands of double and multiple stars lie within reach of even the smallest of telescopes, and are visible on all but the worst of nights, even in light-polluted skies, they're the most neglected of all deep-sky objects. (Incidentally, these tinted jewels are deep-sky objects, lying as they do beyond the solar system.) Were I to pick one object that epitomizes an overlooked and neglected wonder of the skies, it would surely be this lovely combo. Its ruddy-orange and greenish-blue components, while over a magnitude fainter than its namesake's, seem more intensely hued to some observers including myself. Indeed, the primary even appears a fiery-red at times (apparently depending on atmospheric conditions). This pair is striking even in a 2-inch glass at 25X and is absolutely superb in a 6-inch reflector at 50X. So why the neglect? Overshadowed by radiant Sirius to its northwest may be one reason. But, I suspect, the real cause is its unusual designation. Having neither a Bayer Greek-letter or Flamsteed number on atlases—nor even a Struve or other obvious double star designation—causes most observers to ignore it. The “h” prefix indicates that it's one of the discoveries of Sir John Herschel, William's famous son (Sir William himself discovered some 800 double and multiple stars in addition to the more than 2,000 clusters and nebulae for which he is best known). In any case, this Albireo clone certainly deserves to be on every showpiece list!

Jim Mullaney, Author

Recent books by James Mullaney you might find interesting: *Double & Multiple Stars & How To Observe Them* (Springer), *Celebrating the Universe!* (Hay House)

Supplemental information provided by Sue French: “This double also carries the moniker 145 G Canis Majoris, though the designation is often incorrectly listed without the G, which indicates it's from the 1879 *Uranometria Argentina* by Benjamin Aphotrop Gould.”

Observations/Drawings/Photos (Contributors listed in alphabetical order)

NOTE: We'd like to welcome new observers Peter Bealo, Sharon Mullaney, Chris Elledge, Steve Clougherty, Joseph Rothchild, Richard Nugent and Sameer S. Bharadwaj.



Peter Bealo: LVAS Friend from New Hampshire

As clouds were rolling in from the south at 7:20PM EST on February 26, 2017, I took a few minutes to observe h3945 with my 80mm (3-inch) f6 apochromatic refractor.

It's indeed a pretty double. Easily split at even 20X, probably would've been no problem with 14X70 binoculars, but didn't have them handy.

With a 9mm eyepiece, the primary appeared yellow with more intense color than the companion. The companion, or secondary star was a bluish-aqua. When I switched to a 24mm, the companion color intensity was more blue. Possibly very subjective, but obvious to me!

Sameer S. Bharadwaj: LVAS Friend from Massachusetts

I used my 60mm (2.4-inch) refractor at 30X and then Barlowed it to 84X to observe h3945.

Not difficult to find using Sirius, Adhara and Wezen. About the same distance on the other side of Wezen as Adhara. Was at about 24° altitude when I saw it between 7:30 and 8PM local EST.

Could clearly see a warm orange and cyan blue, well separated. The colors were indeed pretty and the contrast was good.



Glenn Chaple: LVAS Friend and Author from Massachusetts

I just returned inside after having made a few small-scope observations of h3945. I studied this beautiful pair with a 60mm (2.4-inch) f/11 refractor and a 114mm (4.5-inch) f/8 reflector. Finding h3945 was a simple matter of pointing each scope at an area defined by a line traced from omicron-1 CMa through omicron-2 CMa and extended an equal distance beyond. Experimenting with different eyepieces, I found that h3945 was best split (not too close, not too widely separated) by magnifications between 35X and 50X. The golden yellow color of the primary was obvious in the 60mm scope. The bluish hue of the companion wasn't as apparent. The colors were more vivid in the reflector, with the primary sporting a rich golden-yellow color, the secondary a soft blue tint. This is definitely a showpiece double!

Steve Clougherty: LVAS Friend from Massachusetts

A few of us diehard observers finally got around to checking out h3945 last night using a 25-inch Dobsonian in the Ed Knight Observatory in Westford at the ATMob clubhouse. Despite only fair seeing, the colors were striking!

Gold and pale Blue. They were best at low magnification using a 13mm eyepiece for a magnification of 131X. As always, the colors were more pronounced when slightly defocusing the double.



Chris Elledge: LVAS Friend from Massachusetts

I was able to split h3945 with 15X70 binoculars tonight (February 27, 2017) after my difficulty yesterday with the stars low on the horizon and my not wearing contacts. With the stars higher in the sky and my astigmatism corrected, it wasn't difficult, thanks to their distinct colors. I would describe the primary to be orange and the companion pale blue.



Sue French: LVAS Friend and Author from New York

The lovely double star h3945 lies about halfway along and 38' west of a line connecting NGC-2367 and Tau (this double also carries the moniker 145 G Canis Majoris, though the designation is often incorrectly listed without the G, which indicates it's from the 1879 Uranometria Argentina by Benjamin Apthorp Gould).

It's the brightest star in the area and sports mag. 5.0- and 5.8 components 26" apart. Although striking in appearance, this is only an optical pair whose unrelated stars lie along the same line of sight. Astronomy author James Mullaney dubbed this duo the Winter Albireo for its resemblance to the famous gold and blue double in Cygnus. In a small scope, they seem gold and white to me.



John Goss: AL President and LVAS Friend from Virginia

The skies in southwest Virginia were near perfect last night. So, not wanting to waste such a rare opportunity, I tried my luck with a few objects, primarily h3945. My equipment was an 8-inch f/4 reflector and the eyepiece was 24mm, giving 32X. It was easy to find as it is a straight shot from epsilon through delta Canis Majoris. The brighter component appeared orange-gold. The other one was what I would call a "Carolina Blue." UNC fans know the shade well.

Yes, h3945 should be on anyone's top ten multiple star list. It is well worth any observer's time, even if he or she doesn't particularly fancy double stars.



Roger and Debbie Ivester: LVAS Members from North Carolina

Object: h3945 Double Star in Canis Major - 145 Canis Majoris

My colors were: Primary deep-yellow and companion aqua.

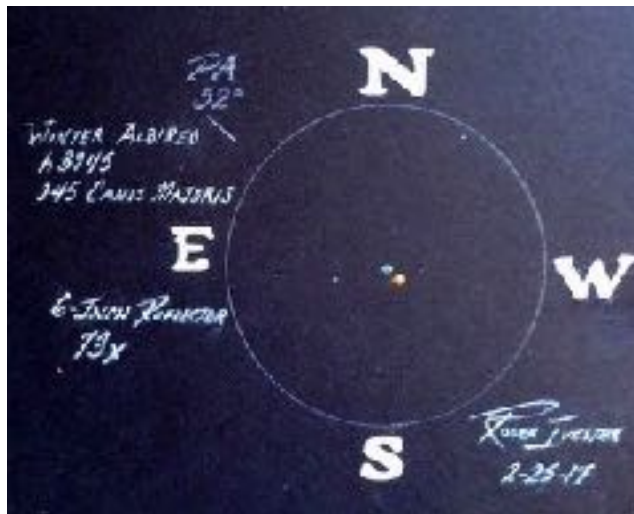
This wide and colorful double star is known as the “Winter Albireo,” a name coined by author and astronomy

lecturer, James Mullaney. The component mags. are 5.0 and 5.8 with a wide separation of 26 arc-seconds. This double is easy to observe even in the smallest of telescopes. I

was able to observe this beautiful double with a 76mm (2.9-inch) f/4 reflector, but with subdued colors, as compared to larger telescopes. The following are my notes using three different telescopes:

In March, 2016, I observed it with a 102mm (4-inch) refractor at 82X. The colors were yellow and blue.

On February 25, 2017, I observed it with a 6-inch f/6 reflector at 73X. The colors were deep yellow and aqua.



On February 13, 2017, I used a 76mm (2.9-inch) f/4 reflector and a 12.5mm + 2.8X Barlow combination for a magnification of 67X. The colors were yellowish and pale blue. - **Roger Ivester**

On February 25, 2017, I observed h3945 with a 6-inch reflector at 73X. The seeing was excellent.

It was a beautiful double star, and definitely the most color I've ever seen through a telescope. I saw the primary as yellow and the companion as a vivid blue. My color perception was not arbitrary. I looked at this double several times over a thirty minute period, and each time, I saw the same colors. It was very enjoyable to see this most colorful pair. - **Debbie Ivester**



Gus Johnson: LVAS Friend from Maryland

In April, 1975 I observed h3945, a double star in Canis Major using a 6-inch reflector at 59X.

It was very similar to the summer Albireo, in Cygnus. Beautiful, yellow primary and blue companion. I easily resolved it with my 10X40 finder.

In October, 1980, I observed it with a 4.25-inch Newtonian at 28X.

It displayed exquisite colors! Yellow and Blue.



Mike McCabe: LVAS Friend from Massachusetts

The LVAS Observers Challenge for February was to observe a colorful double star in Canis Major, 145 CMa, also known as the “Winter Albireo”. I finally got chance to set down and spend some time on it on Friday, February 17, 2017. Up to that point we either had too much moon to do what I wanted to do, or the weather wasn’t conducive to observing.

What I wanted to do was create a sketch using my little 90mm (3.5-inches) Maksutov-Cassegrain. I knew the double star would be fine, but the rest of the field would be dim, so I needed a good night to do it. Plus this baby was low in the south and the trees behind my yard make for a short window of opportunity.

I was first introduced to these stars a few years ago through an article in Sky and Telescope written by James Mullaney. He called the targets on his list the Top 10 Neglected Deep Sky Wonders and over the ensuing years, I’ve found most of them to be very attractive indeed.

Setting down at the scope about an hour after dinner, I was once again presented with this attractive pair in the eyepiece, and they really did look like the Albireo pair that we’re all very familiar with. Depending on the aperture of the scope I’m using at the time, I see the colors as pale yellow and pale blue, with the saturation appearing deeper in smaller instruments. Comparatively, the color saturation might be just slightly less than that

of the real Albireo, but part of that is likely due to the poor seeing down below 20° off the horizon.

Sprinkled about the field was another two dozen stars, and other than a couple of ~8 mag. stars to the upper right of the field, they were all in the mag. 9-11 range. They were almost at the limit of the little 90mm Mak-Cass.

The view, as I saw it through an 18mm/60X eyepiece in the 90mm Mak-Cass was as shown in the drawing below.

The Winter Albireo has been a perennial favorite of mine since it was introduced to me, and it’s always a pleasure to go back to, no matter what size scope I’m using.



Mario Motta: LVAS Friend from Massachusetts

Attached is also h3945 (your Winter Albireo) this with the 32 inch.



Sharon Mullaney: LVAS Friend from Delaware

On February 20, 2017, I observed h3945 with a 5-inch Schmidt-Cassegrain at 50X. Seeing was very good.

It was a stunning double star - brilliant in color. I saw the primary as bright yellow and the companion as lavender blue. The companion definitely had a purplish hue, even after checking back in on this double a few times over the next hour. It was a great night to observe!



Richard Nugent: LVAS Friend from Massachusetts

I had never before observed h3945 so, thanks for the February challenge. What a beautiful double star! I have been observing it over the last month through telescopes ranging from my 10-inch, Joe Henry's 16-inch, Steve Clougherty's 18-inch and my 20-inch scope.

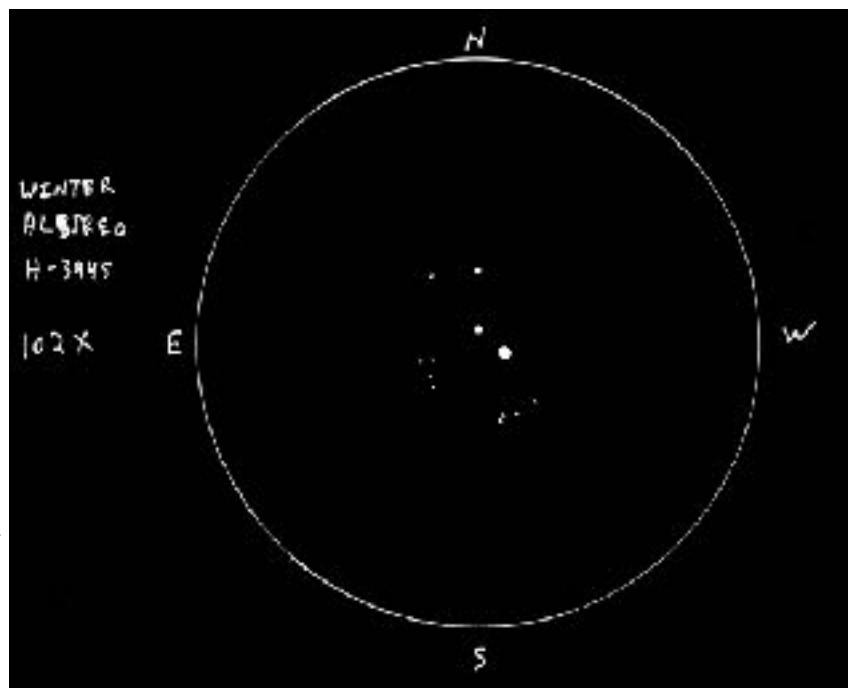
I saw the stars as burnt orange and pale blue. The companion blue star's color seemed muted through the 20-inch, but was more pronounced with the 9-inch aperture mask in place. My favorite view came last Sunday evening through the 10-inch at 50X and good seeing. The colors were quite dazzling! I'll add this to my list of star party objects. h3945 offers the "Wow!" we always hope for.



Fred Rayworth: LVAS Member and AL Coordinator from Las Vegas, Nevada

I observed h3945, the Winter Albireo for the first time on January 27, 2017 at the Furnace Creek golf course driving range in Death Valley at -190 feet below sea level. It was cold, with occasional gusts, just enough to make it uncomfortable. The skies were clear. Seeing was poor, but transparency was excellent.

I saw one bright orange star and the other was maybe blue at first. It was hard to tell because seeing was bad. The main star, the brighter one was orange and looked much brighter than the other one, even though the mags. weren't all that much different. Once in a while, when things settled down for a split second, the dimmer companion's color slipped through and the color, a tint of aqua came through, reminding me just a bit of Uranus or Neptune.



Joseph Rothchild: LVAS Friend from Massachusetts

I observed the Winter Albireo tonight with a 6-inch f/5 reflector at 53X. The primary appeared copper and the secondary a pale blue.



Craig Sandler: LVAS Friend from Massachusetts

On January 24, 2017, I observed h3945 with an 8-inch Schmidt-Cassegrain at 84X (24mm EP) from Tallahassee, FL. The seeing was good, transparency good and NELM 6.0.

First, some nomenclature. I first found this beautiful object tooling around with my GoTo in the hand control's "Constellation" menu item, which will bring up notable objects (NGC, IC, Messier and 2x stars) in a given constellation. Under "Double Stars" for CanMajor, the database gave the designation "CanMaj 145," so I'll always think of it that way. Many prefer the Herschel designation, h3945. Sue

French points out the definitive designation is Canis Majoris G 145, "which indicates it's from the 1879 Uranometria Argentina by Benjamin Apthorp Gould."

In any event, I was stunned when it came into view in Petersham, MA right at the beginning of winter/end of fall. For my report, I'm using an observation in January in Florida—the first apparition was when the double star (and the Trapezium) was so low it was boiling in the atmosphere—quite beautifully, I must say. Anyhow, in January, the object was high in the southern sky and it was beautiful. I think of it as being the state colors of Massachusetts, plus some orange (for the primary) and some purple (for the secondary). I did my usual (sadly) ballpoint pen sketch, because that night I had limited time and a long agenda. Then on Cape Cod in February, I tried a color sketch just for fun. I was not too pleased with the result, but the process was interesting and pleasing. Once I've observed all the Messiers (two to go, saving M56 for Cherry Springs!) and the "Covington 200" (*Celestial Objects for Modern Telescopes*), I believe I'll be ready to slooow dooown and give my sketches the practice they deserve. C.S. to all!

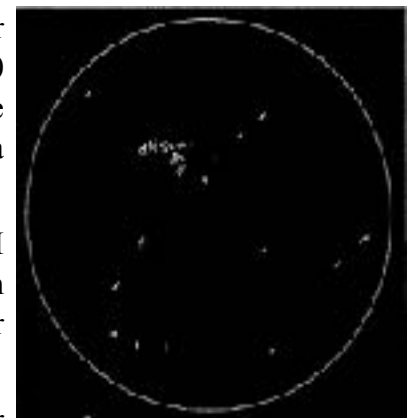


Francisco Silva: LVAS Member from Las Vegas, Nevada

I observed h3945 on Feb 04, 2017 from Boulder Beach, at Lake Mead, Nevada, from 6:10 to 7:00 PM. I used a 10-inch reflector at 80X. The transparency was 3, seeing was 3 and it was a quarter moon.

This object was completely unknown to me. I think my biggest problem was to find the name in the catalog (since it's not Winter Albireo). For those that want to know, it's 145 CMc.

I was very surprised to see how well you can see the double system and their color. One had an amber color and the other a bluish color.





Jay and Liz Thompson: LVAS Members from Henderson, Nevada

We also viewed a bonus object, the Winter Albireo (h3945), which lies a degree or so north of the cluster.

