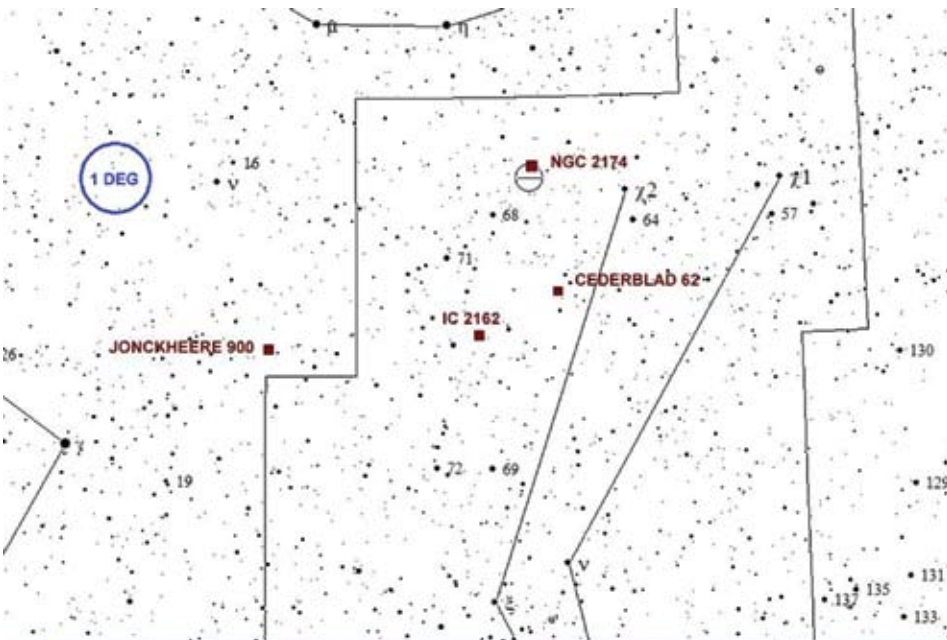


Nebulae Beyond the Club (Orion's, that is!)

by Eric Vondra

With Orion coming into good view again, it's nice to be able to turn the telescope to M42, the Horsehead, the Flame Nebula, and other well-known gems in that constellation. Some observers venture further afield, checking out reflection nebula M78, perhaps moving up to Betelgeuse and admiring several interesting multiple stars within a degree or so to the SSW of that red supergiant. But if you keep heading up past the Hunter's right shoulder, up beyond his club, you'll find a sweet spot in the sky with several "buried treasures." You'll have to aim north of the stars at the handle end of Orion's club, Xi and Nu (70 and 67) Orionis. But there between the tip of his club and the feet of the Twins is the spot we're looking for. Bring your nebula filter if you have one. All positions are in Epoch 2000 coordinates. The accompanying chart is adapted from *Cartes du Ciel*.

If you're star hopping, keep moving NNE past the pair of 72 and 69 Orionis, which are separated by less than a degree. Your first stop will be IC 2162, a set of no less than four bubbles of emission nebulosity, at least two of which may be visible to you, depending upon your equipment. I was shown this creature by one of our members out at Savage (now called Blue Ridge Regional Park) one night last year. This is one where the nebula



MESSAGE FROM THE PRESIDENT

The days have gotten shorter, even if the temperature remained unseasonably warm for a while, so Fall must be here. NOVAC has certainly had a good year so far, and there's every indication that the remainder of 2007 will be similarly good.

We held the Fall Star Gaze, one of NOVAC's major public outreach events, as well as a meeting of the Virginia Association of Astronomical Societies (VAAS), at C. M. Crockett Park in October. Both events were spectacular successes, as I'm sure you'll read elsewhere in this newsletter. Though I was on-site from something like 7:00 a.m., my day was pretty busy—so I didn't actually get to walk out onto the observing field until well after it had gotten dark.

When I did, I was pleased to see that we'd been blessed with clear skies and mild temperatures. But I was really struck by what I heard: the entire field was literally buzzing with conversation. And as I walked around, the same scene repeated itself over and over again: a little cluster of people standing around a telescope talking with a NOVAC member answering questions and guiding them on a personalized tour of the night sky.

As I mentioned to a friend at the time, it's just humbling to see what this club can do.

Not all of the people who came out for the Star Gaze are going to dive headlong into amateur astronomy, of course. But it wouldn't surprise me to learn, years from now, that it was that evening that sparked someone's interest in science. We've already had a number of people join the

continued on page 2



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President's message, from page 1

club after attending the Star Gaze. And I'm sure that literally everyone walked away with a new (or renewed) appreciation of the beauty of the night sky.

A few people who engaged in what could only be called heroics to make VAAS and the Star Gaze happen. But I was also very impressed by the sheer number of NOVAC members who brought their telescopes out—and it was participation on that scale that really made the night a success.

This got me thinking: why is NOVAC so successful, particularly in staging these public viewing nights?

Part of it comes from the size of the club itself. At approximately 900 members, I believe we're the largest observing club in the country. It's a lot easier to get 100 people to come out to support an event when the available talent pool is this large.

OK, that might explain the number of people on the field. But why do we work so well with the public?

Some of it is our curious nature. Anyone who has advanced in the hobby to the point where they've purchased some equipment and set it up on a clear night has already demonstrated a desire to learn more about the universe we inhabit. So it's only natural that we enjoy talking with others who share our curiosity.

Amateur astronomy is definitely a hobby that rewards patience. It takes time to learn the sky. Much of the equipment we use is complex. And even after learning those basics, it takes plenty of patience to become a truly skilled observer. It's not hard to see how this patience translates

into an ability to share the sky with newcomers.

I'm sure there are other reasons, too. In any case, it's great to see what our club is capable of doing, and that our members derive so much joy from sharing their knowledge and some time at the eyepiece. Thank you, all of you, for your part in making NOVAC such a successful club.

This is my final column for the newsletter as club president; a new slate of officers will take over beginning on January 1. I've had a very enjoyable year, and am thankful for the opportunity I've had to work with (and learn from) so many people in the club.

I started out the year talking about volunteerism in the club, and I'm going to close on the same note. Our club has tremendous breadth and depth; it's one of the benefits of being such a large group. While I've frequently talked about the hard work of our volunteers, the fact is that it's also really rewarding work. In the course of work on a number of projects, I've met a lot of people I wouldn't have encountered any other way. I've learned about interesting things I never would have encountered had it not been for work with NOVAC. And I've even had the chance to look up at the sky a few times along the way.

So, to the entire club: thank you. I hope that each and every one of our members will continue to make NOVAC a diverse, strong, knowledgeable, and friendly club in the year ahead.

Clear skies!

Phil

Members are encouraged to submit photos, articles and reviews of books, software and equipment. If you would like to submit an article for publication send an email to newsletters@novac.com.

Nebulae Beyond the Club from page 1

filter will help you. We could see the two brightest bubbles in the 12-inch with an H-Beta filter. These are on the short list of objects for which the H-Beta filter is particularly helpful, by the way, so if you have one don't put it away after looking at the Horsehead! There's a nice image at www.noao.edu/outreach/aop/observers/ic2162.html from the National Optical Astronomy Observatory, with north at about the 1:30 position. A wider field image at www.btlguce.com/images/Trips/IC2162c-rop.jpg may help you to get your bearings. This second image has north at 3:00.

The two brightest bubbles are centered on star GSC 1318:120 (11.3 magnitude, RA 6hr 13min 4.2sec, Dec +17deg 58min 41sec) and star GSC 1318:432 (10.8 magnitude, RA 6hr 12min 44.22sec, Dec +17deg 59min 14.75sec). The centers of these bubbles are only about 5 arcminutes apart. About 1.5 arcminutes to the SW of the western of the two bubbles is a much smaller bubble. In the 12-inch we could see only a star there but no nebulosity. Maybe a darker sky would yield up more? There is a fourth bubble, the biggest and dimmest, to the WNW, whose diameter in images is a little larger than the distance between the two brightest bubbles. This one is centered just to the NW of GSC 1318:791 (RA 6hr 12min 22.13sec, Dec +18deg 00min 57.81sec). I found no observations of IC 2162 in the Internet Amateur Astronomy Catalog (www.visualdeepsky.org/search.html) and no image or observation in the NGC/IC Project's database (www.ngcic.org/ngcicdb.asp). These bubbles of nebulosity also have the designations Sharpless 2-254 through 2-257. If you image these you might also pick up a small reflection nebula to the SE at about RA 6hr 13min 27sec, Dec +17deg 55min 25sec.

Once you're done admiring or straining your eyes, as the case may be, and you feel like moving on, head NW about 1-1/3 degrees to Cederblad 62, a bipolar reflection nebula surrounding 11.9 magnitude star GSC 1317:311 (RA 6hr 7min 49.62sec, Dec +18deg 39min 24.19sec). This was

originally given the designation NGC 2163, but due to an error in declination the Revised New General Catalog listed it as "non-existent," so you might see it listed as such, as Cederblad 62, or not at all in your chart or database.

Observing recently at The Mountain Institute, I was able to make out this nebula in my 10-inch f/5 dob, and found that about 180x worked best for me. The nebulosity is oriented north and south of the star, with the northern part a bit brighter. This should be a challenging object from a brighter sky with the same or slightly larger telescope. This is not one that jumps out at you. Because it's a reflection nebula don't bother with filters.

After Cederblad 62, the next object should appear quite remarkable. Its nickname is the Monkey Head Nebula, and in images and even in the telescope you can see why. The official designations for various parts of it are NGC 2174, NGC 2175, and IC 2159. It is primarily an HII region centered on 7.5 magnitude star SAO 78049 at RA 6hr 9min 39.6sec, Dec +20deg 29min 15.5sec. The monkey has north at the top of his head and is facing to the west with a noticeable smirk on his face. The star might be his eye, although there's an 8.2 magnitude star just 3 arcminutes to the ENE which spoils the impression just a little. However, I found that this star appeared dimmer in the telescope, and wonder if it's variable. The monkey's upper lip is an east-west brighter elongated area just to the southwest of SAO 78049. I found that a little straight line of 10th magnitude stars just north of the nebula and equidistant between 7th magnitude stars to the east and west makes a good reference point to orient your view when comparing it with images. There are many excellent images on the Internet, one of which is at <http://starmatt.com/gallery/astro/ngc2174.html>. This shows that line of stars.

Dreyer called NGC 2174 "extremely faint" (eF) in his early description, so that may have put off some observers from trying for this one. Don't be dissuaded,

however, because this is a very interesting nebula that responds particularly well to nebula filters. Lower power may be your best bet. It's the kind where the more time you spend on it, the more you will be rewarded with finer details.

One more nebula before you turn back to some of your more familiar favorites. This time we'll sneak out of Orion into Gemini for a peek at one of the more accessible of the obscure planetary nebulae. If you're star hopping, tear your scope away from the monkey and head down to the southeast past 68 and 71 Orionis until you see a line of three 7th magnitude stars continuing to lead you southeast. 2-1/3 degrees further southeast from the last in that line of stars you will find the field for Jonckheere 900. This also goes by the designation PK 194+2.1. It's a small one, but fairly bright at magnitude 12.4. However, it's only about 9 arcseconds in diameter, so once you find the field, you'll have to bump up the power. The position is RA 6hr 25min 57.3sec, Dec +17deg 47min 27sec. A 12.5 magnitude star, GSC 1332:1692, is a mere 11 arcseconds away in position angle 200 (or slightly west of due south). It's proximity should help you to find the nebula, which appears larger, fuzzier, and bluer than that star in my 10-inch. The central star is 17.8 magnitude, too dim for my scope.

There is an image of Jonckheere 900 at www.ghg.net/akelly/j900larg.jpg which should help you confirm the observation, as well as a series of Hubble close-up images at www.astrode.de/j900.htm which is in German in case you need the linguistic practice. If you like this one, you might want to try for tiny Minkowski 1-92 (the Footprint Nebula) in Cygnus (RA 19hr 36min 18.9 sec, Dec +29deg 32min 50sec, near Albireo), which reminds me of this one only it's truly a bipolar nebula, not a nebula next to a star. But that's for another night and another season. Happy hunting! ★

VAAS 2007 and Fall Star Gaze

VAAS by Rob McKinney

Well, the (star)dust has settled and the VAAS 2007 meeting is history. VAAS? What's a VAAS?

Virginia has almost 20 astronomy groups, all of which are members of the Virginia Association of Astronomical Societies by dint of being in Virginia and, well...being astronomy groups! VAAS is a loose amalgam of those groups and does not have a formal structure or officers; in fact, the only formal arrangement so far is a set rotation for "active" clubs to host the annual VAAS sessions.

NOVAC was pleased to join the ranks of "active" VAAS clubs by hosting this year's event. We invited all Virginia clubs, as well as groups in the D.C. metroplex area (some of whose members are also members of NOVAC), to enjoy a program of speakers, a catered lunch, and the chance to observe during NOVAC's StarGaze. We had members from the following clubs attend: Charlottesville Astronomical Society, Richmond Astronomical Society, National Capital Astronomers, Roanoke Valley Astronomical Society, Norfolk

Astronomical Society, Back Bay Amateur Astronomers, and the Shenandoah Valley Stargazers.

We had 60 confirmed attendees at the session and more drifted in as the day went along, particularly as NOVAC members began arriving for the evening's annual StarGaze. The presentations were held under a big, white tent, which served its purpose as the morning's fog turned into a light drizzle about 10am. We began late due to the "fog delay" so late arrivals could get through traffic and find the site (C.M. Crockett Park). Two speakers gave their talks in the morning, then three after lunch (as opposed to the previously scheduled three then two).

Elizabeth Warner led off with a presentation on the results of the Deep Impact mission to analyze the content of a comet by using a copper impactor to smash into the comet and produce ejecta. Greg Redfern spoke on the Chesapeake Bay crater, an impact event of another sort. After lunch, Harold Geller talked about astro-

biology and the universe of star stuff that has become life. David Dunham spoke about his efforts and techniques to observe grazing occultations. Neil Cronin finished the day with his presentation on the just-launched Dawn mission to investigate the asteroids Vesta and Ceres. All the talks were excellent and very well received!

No one went away hungry as NOVAC provided more than enough coffee, donuts, and a delicious and filling barbecue lunch from Red, Hot & Blue.

Many of the out-of-town attendees to VAAS stayed for the StarGaze, one of two large annual public observing events put on by NOVAC. And the weather cooperated with the fog and overcast of the morning giving way to relatively good skies (clear, somewhat transparent) by late afternoon permitting solar and stellar observing.

At the business session following the presentations, the Norfolk Astronomical Society confirmed they are hosting the 2008 VAAS session. Other business topics included setting up a listserv and/or VAAS "group" on hardware hosted



Speakers at VAAS: Left: Elizabeth Warner, University of Maryland College Park Observatory Director and Deep Impact EPO representative; Right: Greg Redfern, NASA JPL Planetary Ambassador (PHOTO CREDIT: HAROLD GELLER)

Fall Star Gaze by Lyle Mars

The NOVAC Star Gaze was held on Saturday, October 6. I was worried earlier in the day when we had light drizzle on the VAAS tent, but by 4:00 p.m. the skies were clear. Greg Piepol led off with solar observing at 3:00 pm with his hydrogen alpha and calcium filter telescopes. I think that everyone had lots of fun with Bill Burton's "Your Place in Space" program (I really wanted to be a globular

cluster!). I estimated the attendance at around 250 by the time Ed Witkowski did his sky tour. I counted 75 telescopes on the field, which included everything from Pete Johnson's 25-inch Dobsonian to binoculars. Our guest speaker Dr. H. John Wood, gave a talk on images taken by the Hubble Space Telescope ("Understanding the Universe: 15 Years of Astounding Images by the Hubble Space Telescope"). Dr. Wood

is the lead optical engineer on the Hubble Space Telescope and showed some of the greatest images ever taken by Hubble. His talk ended with a flyover by the International Space Station! Observing went on through the evening until around 1:30 a.m. when the fog rolled in. I want to take this opportunity to thank the NOVAC members, volunteers and Dr. Wood for making Star Gaze a success. ★



The start of the day did not look promising but by afternoon the sky had cleared. (PHOTO CREDIT: HAROLD GELLER)



NOVAC volunteers at the information and shirt sales tables.



Bill Burton (left) hosted the "Your Place in Space" program

More on page 6

VAAS continued from p. 4

by NOVAC, pursuing a VAAS website (permission for www.vaas.org has been granted!), opening up club e-mail addresses (opt-in) for VAAS communication, and inviting all Virginia clubs to become “active.”

Thanks to the VAAS 2007 speakers, to Craig Johnson at Crockett for providing the superb location, and to worker bees: Matt Roper, NOVAC webmaster, for the registration page; Yvette Johnson, NOVAC Secretary, for contracting with the caterer; Lyle Mars, NOVAC Trustee, for invaluable

help with innumerable tasks; and Phil Wherry, NOVAC President, for A/V support and overall leadership. A tip of the hat to Bob Parks, NOVAC Past-President, for leading NOVAC into the active ranks of VAAS. And, thanks to all the attendees, especially John Goss (Roanoke Valley Astronomical Society & MERAL) for support from the Mid-East Region of the Astronomical League, and Terry Barker (Richmond Astronomical Society) for early advice on hosting VAAS 2007.

See you in Norfolk for VAAS 2008! ✪



NOVAC Recognizes Volunteers

Come join your fellow club members at a reception for NOVAC’s many volunteers! We’ll hold it outside the usual meeting location (Enterprise Hall Room 80) at GMU beginning at 5:30 on December 9. If you’ve volunteered for NOVAC in the past, are thinking of volunteering your services in the future, or simply want to honor those who have done great things for the club in 2007, we invite you to attend.

NOVAC members are also reminded that December’s meeting features our annual general election. See the related article below for details.

Featured at the December meeting will be a presentation from Dr. Andy Clegg of the National Science Foundation on “The Future of Ground-Based Observatories.” This promises to be a fascinating discussion; we hope to see you there! ✪

Elections

NOVAC’s elections are coming up at the December 9 general meeting. The club will vote for four elected officers (president, vice-president, secretary, and treasurer; all one-year terms), plus three of our five trustee positions (two-year terms). Any dues-paid club member with a desire to get more involved should consider running for a NOVAC Board position. There’s considerable work involved, of course, but most of it is interesting and pleasant. NOVAC leadership is a great way to get the most out of your involvement with the club—and to ensure that others do as well. If you’d like more details or want to place your name on the ballot, contact Phil Wherry (president@novac.com) or any other Board member. ✪

"To observe, and to help others observe"

NOVAC is a non-profit, all-volunteer organization chartered to advance amateur astronomy in Northern Virginia. Members benefit from:

Access to dark sky observing sites:

NOVAC maintains agreements that provide club members with year-round access to observing sites away from city lights

Monthly meetings

Monthly meetings are held at 7 p.m. on the second Sunday of each month in Room 80 of the Enterprise Building on the campus of George Mason University. Each meeting features a lecture on an interesting topic by a local expert. See the web page or future newsletters for a schedule of speakers.

Bimonthly newsletter

The NOVAC newsletter provides information specifically for NOVAC members, as well as general interest articles on such topics as observing reports, equipment reviews, upcoming events, ATM projects, and more.

High-quality telescopes to borrow

NOVAC members may borrow one of the clubs several "loaner" telescopes at no charge. Members may choose from among three 6 in. reflectors, two 10 in. f/6 reflectors, an 8 in. SCT, and a hydrogen-alpha solar scope. Binoculars are also available for loan.

Club website

Up to date information about club events and activities is maintained on the club website at www.novac.com.

Large club library

NOVAC maintains a well stocked library that members may borrow from by contacting John Deriso (olgazer@verizon.net). A full list of titles is available from the club website.

Private email listserv

Members keep up with current club information by subscribing to the NOVAC email list, without fear of flame wars or spam emails.

Public outreach opportunities

Several times each year, volunteers from NOVAC present astronomy programs to schools, churches, Scout troops, and other public groups.

Membership in the Astronomical League

Through NOVAC's membership in the Astronomical League, NOVAC members gain access to the AL's newsletter, services, and observing programs.

Discounts on astronomy magazines

Subscriptions to *Sky & Telescope* and *Astronomy* magazines are offered to club members at a considerable discount. Contact Kent Allingham (see contact info at right).

See your Membership Guide for more details.



The NOVAC Newsletter is the official publication of the Northern Virginia Astronomy Club and is published six times per year. The NOVAC Newsletter is sent to members of NOVAC as a regular membership benefit.

Membership

Membership in the Northern Virginia Astronomy Club is \$30.00 per year and is open to anyone interested in astronomy or the sciences. Additional memberships at the same address without additional copies of the newsletter are \$5.00 per person. Contact:

Kent Allingham
3510 Country Hill Drive
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Change of address

All notices of change of address should be sent to Kent Allingham. Please include both old and new addresses.

Advertising

NOVAC does not knowingly accept advertising for products of inferior quality nor does it accept responsibility for the quality of advertised products.

Submissions to the newsletter

NOVAC members are invited to submit articles for publication in the NOVAC Newsletter. The editor reserves the right to edit all materials submitted. Send article submissions to the Editor, Tim Nicholson, at newsletters@novac.com.

The deadline for submissions is two weeks in advance of publication: Tuesday, January 15, 2008 for the January/February 2008 newsletter.

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Next Meeting

December 9, 2007, 7 p.m

Dr. Andy Clegg, National Science Foundation

The Future of Ground-Based Observing

See page 6 for more meeting info

General membership meetings are open to the public, and are held at Enterprise Hall, room 80, on the campus of George Mason University (see www.novac.com for directions) in Fairfax, Virginia. The meeting hall is in the basement floor of the building. Since Parking Lot B is now closed, you should park across the street in the far reaches of the Patriot Center's parking lot, then walk up the path to the rear of Enterprise Hall.

Inside

- * **Nebulae Beyond the Club (Orion's that is!)**
- * **VAAS and Fall Star Gaze Recap**
- * **Volunteer Reception**
- * **NOVAC Elections**

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