



of TARS & TERNS



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Volume XXXVIII Number 3

March 2004

BRIDGE OFFICERS



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S/C Elwood P. Sheetz, AP



EXECUTIVE OFFICER
Lt/C Keith B. Segerson, P



EDUCATION OFFICER
Lt/C G. Jay Nelson, P



ADMINISTRATION OFFICER
Lt/C Richard P. Davis, AP



SECRETARY
Lt/C Cathy F. Sheffield, AP



TREASURER
Lt/C Joel P. Bailey, AP

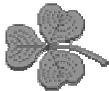


Northern Virginia
Sail and Power Squadron
District 5
A unit of the
United States Power Squadrons®
Sail and Power Boating

www.usps.org/localusps/nva/
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Calendar of NVSPS Meetings and Events

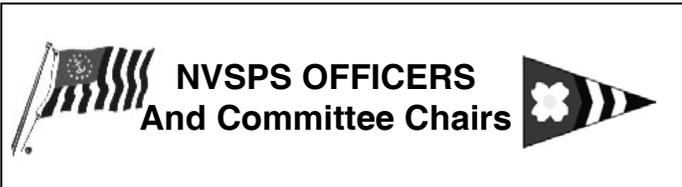
March

- 10 NVSPS Membership Meeting
- 11 – 14 National Capital Boat Show
- 15 *Inputs due to oT&T*
- 17 **St Patrick's Day** 
- 21 **NVSPS Change of Watch**
(See details on page 11)
- 23 & 25 New Vessel Examiner Training
- 26 – 28 D/5 Council/Spring Conference
(See details on page 2 & 10)

April

- 14 NVSPS Membership Meeting
- 15 *Inputs due to oT&T*
- 31 – 1 D/5 Cooperative Charting
Workshop





D5 - USPS®

**Winter Council & Spring Conference
26, 27, 28 March '04
Princess Royale, Ocean City, MD**

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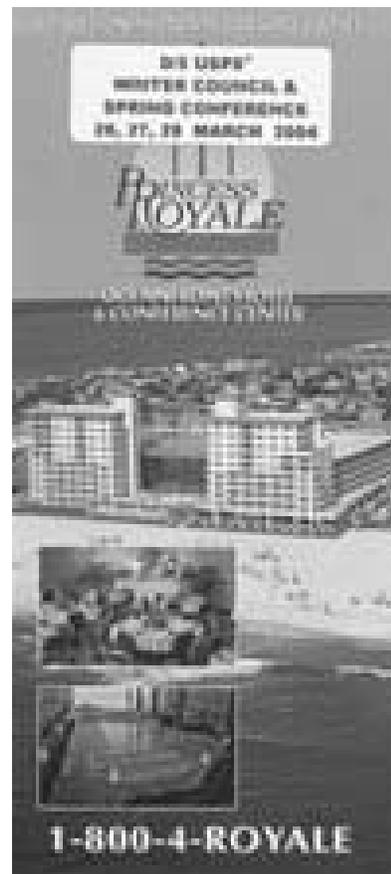
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COMMANDER'S CORNER

Commander's September Song for March

"As the days dwindle down to a precious few, these days I'll spend with you."

September Song became a favorite of mine after I saw the romantic movie many years ago. This past year, as commander of the Northern Virginia Sail and Power Squadron, has been especially memorable for me, as the days now dwindle down to a precious few. As my watch ends, I know how precious it was to have your trust as commander.

My Bridge, the Executive Committee, and you, the members of our Squadron, continued to implement the administrative and program changes began by the previous Bridge's and our revised bylaws. Of special note during this watch were:

NVSPS sponsorship of Sea Scout Ship 1942 and our strong involvement with the Sea Scout apprentice members of our Squadron. As a past commander I plan to work with the new Bridge, the youth activities chairman, as well as other organizations in order to enhance and expand our continuing youth program.

Education Officer Lt/C G. Jay Nelson, AP programmed a Power Point training aid for the USPS boating course. This training aid won the First Place award for both the NVSPS and Jay at the USPS Annual Meeting. In addition, Jay continues to give his personal time and weekends to provide training to our Sea Scouts. We made a great leap forward in our education program under the direction of P/C Richard Durgin, JN when he convinced the Executive Committee to fund the procurement of power point projectors and laptop computers for our courses. I wish he would have been as generous in expanding the Commander's travel budget!

It has been a year filled with fellowship, wonderful cruises, and rendezvous on the Bay and our Rivers. Great news! Our Treasurer Lt/C Joel Bailey, AP has agreed to be our cruise director again this year!

These are only a few of the achievements our members have accomplished this year, which I have tried to acknowledge at the Founders Day Award presentation, and at the Change of Watch. Most important, all members who received a merit mark are recognized for their work in the Squadron. I honor all of your contributions during my watch. Thank you! At the Change of Watch last year, I mentioned that membership in the fraternity of the Northern Virginia Power Squadron has blessed me with love, affection, and friendship beyond measure. My future plans are to continue in this happy state of being as long as you will allow me.

Cdr Elwood Sheetz, AP

***of Tars & Terns* Editor Change**

We are pleased to announce the name of the new editor of the *of Tars & Terns* starting April 2004.

Richard Yeomans



**Richard can be reached at:
aliancegp@email.com
703.378.0473**



EDUCATION OFFICER'S REPORT

By Lt/C G. Jay Nelson, P

The NVSPS winter 2004 education program is continuing the momentum established in the fall. We are currently concluding a Seamanship Course, an Instructor Development Course and two Boating Courses. We have a Weather Course starting on 24 February at Fairfax High School (Contact John Shivik at 703-273-3351 if you would like to join) and five more Basic Boating Courses scheduled before the boating season starts (see the listing below). This will bring the total number of courses taught by the NVSPS for the 2003/2004 season to 22 courses. Great work by all accounts and my personal thanks to all who helped us achieve this goal.

Remaining winter NVSPS Boating Course schedule:

- Robinson Secondary School 23 Feb 04
- McLean Community Center 13 Apr 04
- West Springfield High School 27 Apr 04
- Thomas Jefferson Middle School 19 Apr 04
- McLean Community Center 11 May 04

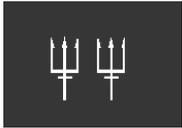
We are already beginning to plan our 2004/2005 season Advanced Grade Courses. To date we have had member interest in our Piloting, Advanced Piloting, Marine Electronics and Cruising courses. This is certainly not envisioned as the extent of next year's program. We can run as many courses and we have member interest to support. Think about the courses you would like to take, send me your preferences at gjaynelson@aol.com, and we will include these suggestions in our planning. Reminder – the course listings and descriptions can be found on the NVSPS website - <http://www.usps.org/localusps/nva/educ/membcour.htm>



There are a lot of exciting changes coming next year in the USPS educational programs. The Piloting and Advanced Piloting course contents are being changed to incorporate the current electronic navigational aids available to pleasure boaters. More emphasis will be placed on the use of radar, electronic compasses, GPS and GPS plotting devices. Less emphasis will be placed on interpolation and the traditional tide and current charts. The Boating Course is also undergoing a facelift to address the current recreational boater's needs. Radar and GPS will be introduced as new subject matter in the fall 2004 version of the course.

All of the new USPS courses are converting to professional Power Point presentations with extensive color graphics and photographs to enhance the student's learning experience. The decision of the NVSPS Bridge early this year to step up to the purchase of three sets of PCs and LCD projectors places our Squadron in the forefront of this USPS educational transition. Our course volume, course development efforts and our decision to embrace the current teaching methods and technologies has given NVSPS excellent recognition at both the District and National levels. Great work by all!

G. "Jay" Nelson
SEO NVSPS



The Admin' Officer's Moment

By Lt/C Richard Davis, AP



Membership Involvement.

At many an E-Board meeting, I have raised the question of membership involvement. Why won't more people take the various training courses we provide? Why won't more people come to the dinner meetings? Why can't we get more people to help out with the public boating courses? Actually Northern Virginia has about 25 or so people who basically run the squadron, take its courses, go to the dinner meetings, and teach the public. Somewhere out there is a silent majority, maybe a hundred or so people, who dutifully mail in their dues once a year and who otherwise we never hear from. Now don't get me wrong. This is their squadron as well as ours and they can use it as they see fit. What's more, their dues certainly do help with the various expenses we have in running the squadron and providing public education. So this silent majority is welcome. BUT, WHAT WOULD IT TAKE TO GET THEM MORE INVOLVED? Why do we care? Lets start with the second question first. I think you would be very surprised at how much work goes into each activity we are involved in. Meetings may perhaps be somewhat routine. But the courses are not. Nor is anything else we do. So, what we have is a limited number of people doing a lot of work for the benefit of the same limited number of people. It's kind of like investing a buck for a year and getting back a buck at the end of the year. Not a loss by any means, but why bother? Well, don't worry; we are going to keep bothering if you will. But, it is my hope that the new year 2004 is going to be a little different. We are committed to three things so far,

First – we are going to do our best to have an informative and dynamic speaker for each and every meeting. I believe that this commitment as well as other changes we are planning will make them a value that will be hard to pass up. Second, we are going to work on a number of special events that should be of interest to most people. Already on the books for this spring are number of rendezvous, cruises and family outings. How can you pass these up? Watch for them in the next edition or check our web site.

Finally, I am going to let you in on a secret – All these courses we teach – well, some can be quite daunting! Especially if you have to take an exam at the end. Well here is the secret – you don't have to. You don't even have to go to the classes. Classes and exams are only for those of you who would like to be publicly recognized for your achievements. If knowledge is all you want, forget all the classes and exams! (Now I can promise that you will learn more if you do attend the classes – even more if you discipline yourself to take an exam – but you certainly don't have to.)

This AO Moment maybe getting a little long . So I will summarize. We need more new members and we need better member retention and involvement. YOU CAN HELP. Our plans include a much more exciting and beneficial year for 2004. – and we promise – No Exams.

Hope to see you soon

Share the knowledge and share the fun.

NVSPS Trophies and Awards

2003 - 2004

NVSPS Educational Award: Awarded annually to the NVSPS member for his / her outstanding contributions to our Educational Department. Originated by P/C James M. Settle, AP. Awarded to: *Dwight Bues, AP*

NVSPS Newer Member Award: Presented annually by the NVSPS Commander to a new member who has made substantial contributions of time and effort to the success of the Squadron. Awarded to: *Michael L. Waltman, P*

Outstanding Instructor, Boating Safety: For the Instructor of Boating Safety who best exemplifies the spirit and principles of USPS®. Originated by P/C Jere Dando, AP and Nancy Dando, P. Awarded to: *Paula D. Bailey, AP & Joel P. Bailey, AP*

Charles S. Kent Perpetual Memorial Award: Presented annually to the NVSPS sailboat skipper whose seamanship, dedication, service, participation, and citizenship best exemplify the USPS. Awarded to: *Judy K. Soballe, P & Peter W. Soballe, P*

Jack Isicson Trophy: Presented by the Isicson Family for the best single score of the year in an NVSPS navigation contest by a NVSPS boat navigated by her owner. Awarded to: *Williams S. Alberts, SN*

NVSPS Special Award: Presented by the NVSPS to a "First Mate - Extraordinary" who has supported her husband in his nautical quests and that of the NVSPS. Awarded to: "First Mate Extraordinary" *Helen Alberts*

Past Commander's Award: Presented to a NVSPS Past Commander who has provided outstanding performance, service, participation and support. Originated by P/C Jere Dando, AP and Nancy Dando, P.

Golden Heart Award: Awarded to: *PC Dennis S. Jezierski, P* Presented to Pat Ferrufino by the members of the Northern Virginia Sail and Power Squadron. Inscribed "DENNIS WE MISS YOU, OUR COMMANDER, FRIEND, AND TEACHER"

Commander's Discretionary Awards: Presented to the NVSPS members who have performed exceptional service to the Squadron:
Awarded to: *Lt Alan D. Sager, AP, Lt/C Cathleen F. Sheffield, AP, D/Lt Charles Hilden Olin, AP, Lt Elaine S. Colen, Lt Jean P. Durgin, AP, Lt/C G. Jay Nelson, P, Lt Lindalee B. Fitton, P, Lt Thomas W. Ballew, S, Skipper Sea Scout Ship 1942*

USPS Educational Department: 1st Place National Award for best Boating Course Training Aid at the 2004 Annual Meeting. Awarded to the NVSPS and EO Lt/C G. Jay Nelson, P who developed the Power Point course.

Dock Talk



D/5 Spring Conference Fun

Join us for a great time at the D/5 Spring Conference 26-27 March at the Princess Royale Hotel, Ocean City, MD. Your Mark V newsletter lists conference activities and information about hotel reservations. D/5 officers will present workshops for incoming officers on Fri. and sessions for all members on Saturday.

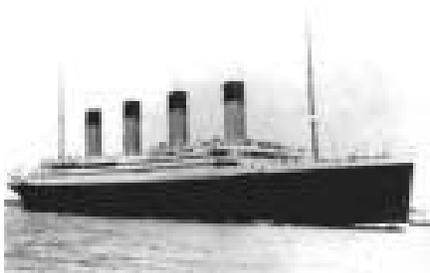
Friday evening everyone will enjoy the refreshments and activities of many hospitality rooms sponsored by squadrons and guaranteed to be a boatload of fun! Northern Virginia's theme is "Lessons Learned from The Titanic." There are lots of ways for you to be involved in the presentation of our hospitality room:

- Decorating the room (at approx. 1500)
- Preparing refreshments (at approx. 1800)
- Welcoming visitors (2000 to 2200)
- Clean-up (at 2200)

Northern Virginia's members will look sharp in special blue or white "Titanic Crew" t-shirts which will be sold at the 10 March general meeting for \$11. (Bring your cash!) Members are also encouraged to wear a 1912 costume if they wish.

To volunteer to help, please e-mail me at carney1227@aol.com or call during the evening at 703-370-4331.

Cathy Sheffield, AP
Co-Chair, Hospitality Room



Flare Gun Malfunction

A defective opening mechanism in some 12-gauge plastic flare guns manufactured by Olin (now Orion Safety Products) prior to 2000 may not open wide enough to accept a flare cartridge. Guns with a modification to correct the possible problem are marked with U.S. Coast Guard approval code 160 028//12/1. Boaters with older flare guns should check the operation of the opening mechanism now and at the start of each boating season. If the breech will not open wide enough to accept a cartridge, the gun should be sent back for a replacement. Send defective guns to: ORION SAFETY PRODUCTS, MARINE DIVISION, 3157N. 500W, PERU, IN 46970; 1-800-851-5260.

Jeff Decker

Boating Education Supervisor

804-367-8693

Boat Smart - Wear Your Life Jacket

Calling All Vessel Safety Examiners!!!!!!



We are off to a busy start to the boating season with Vessel Safety Checks scheduled at Prince William Yacht Club on April 3, 10, 17, and 18th. We will again be working with the folks from the Coast Guard Aux. – this cooperative venture has always been great way to start the season, meet fellow boaters and help make our waterways safer for all. It's also a great opportunity to spread the word about NVSPS Boating Classes!

For additional information contact: Elaine Colen ELSC97@aol.com or 703-960-3033

Summer's Coming and the Cruisin' is Easy!

The annual summer cruise is the week of 19 June 2004. We start out at Spring Cove Marina in Solomons on Saturday and Sunday nights, 19 and 20 June. The Administrative Officer tells me that there's going to be a rendezvous on the evening of 19 June, and there's a navigation contest on 20 June. We move onto Point Lookout Marina for Monday and Tuesday nights, 21 and 22 June, then it on to Somers Cove Marina in Crisfield, Maryland for Wednesday and Thursday nights, 23 and 24 June. Everyone heads home on Friday, 25 June.

Note: there are some changes in procedure this year! The marinas are becoming sticklers about slip deposits so I need to collect those in advance. I also need to collect them by 1 May. **I must have your slip reservation form with a check for all deposits plus the activity fee (\$30) by 1 May or I'm afraid you're on your own for making slip reservations.**

Please complete the attached form attached and forward to me with a check for the slip deposits and the activity fee of \$30 by 1 May. The slip deposits are \$30 per day for Spring Cove Marina, \$10 per day for Point Lookout Marina, and \$25 per boat for Somers Cove Marina. Thus, if you plan to attend every day, you should forward me a check for \$135 (\$60 for Spring Cove, \$20 for Point Lookout, \$25 for Somers Cove, and \$30 activity fee). The activity fee covers the cruise booze and party favors. Your slip rental fees will be credited for all deposits paid in advance.

Please make your decision about the summer cruise early! On 1 May, I must forward the cruise list to the marinas and release any excess reservations. It may be challenging to get a slip reservation after that date, especially at Spring Cove Marina.

There are also some weekend cruises planned. **Please make your own slip reservations for the weekend cruises.** For the Memorial Day weekend, we are cruising to Mears Yacht Haven in Oxford, Maryland (note: some cruisers plan to anchor out in Plain Dealing Creek across the Tred Avon river from the marina).

For Labor Day, we're going to St. Michael's Town Dock Marina (again, some cruisers will anchor out). In October, we're going to Tilghman-on-Chesapeake Marina for Tilghman Island Day. We will provide more information once the dates for Tilghman Island Day are announced. Please book your clip reservations early for these events – the marinas fill quickly on Holidays.

Note that all of these cruise locations are accessible by land. Please feel free to join us by car! Finally, please call me at 703-444-5269 if you have any questions or email joelpbailey@hotmail.com.

Continued on page 12 with sign-up form



Looking for Springtime Fun??

You've spent a lot of time becoming very knowledgeable about boating and boating safety – have fun while putting that knowledge to work. Lt Elaine Colen will conduct a two-evening training session for Vessel Safety Check Examiners at the BoatUS Headquarters March 23 and 25th. The VSC is a great way to reach out to the boating public and promote our educational and safety goals – while having a lot of fun. This is your chance to crawl around on different boats, share your love of boating and boating knowledge with others to help make our waterways safer for all. Staying current on VSC requirements helps you stay on top of your own knowledge of boating and boating safety.

Training to become a Vessel Safety Examiner requires only two evenings of class, a short written exam, and five "training" vessel exams with a qualified Vessel Examiner – and it's FUN! For additional information on this free training class contact: Elaine Colen ELSC97@aol.com or 703-960-3033



Tech Tips

By D/Lt Dwight Bues, AP

A Bum Steer

Ever have one of those days??? Back when I was 13, we were cruising to Solomons from Baltimore, eight hours with a following sea when, all of a sudden, I turned the wheel AND NOTHING HAPPENED!!! As it turns out we had lost our rudder. It was a "cruiser" rudder that was supported by a skeg and the blade had broken off of the shaft at the top. It is a rather helpless feeling as you can imagine. Even if you would "rudder" not talk about it, the subject is an important one.

Flash forward to the present: now we have hydraulic steering and you're cruising out in the bay, when your steering "vanishes" (at least that's what it feels like). Forgot to check the oil level!!! Some older boats (mine is 24 years old) tend to seep a little at the connections. Usually it is more of a nuisance as far as cleanliness is concerned, but you DO need to check the oil level, because once it drops below the level of the helm pump intake and you suck air, there is NOTHING (air is VERY compressible while the fluid is not -- hence the abrupt change in feel).

Some newer systems are pressurized and can have "issues" if the pressure is not maintained. One Squadron member told me of his experience in one of those "Power Cats": they would surf down one wave turning the wheel to port, surf up the next, and then down (turning the wheel to port again). Basically, they turned the wheel to port all day. Maybe the pressure was low causing the fluid to backfeed through the pump -- most of the OLDER systems are strictly one-way (which, by the way, makes them hard to purge of air).

Every sailor by now has probably had the joy of dismantling one of those aluminum steering pedestals (yeah, the one with the stainless steel screws). I heard about a new pedestal steering problem the other day, however.

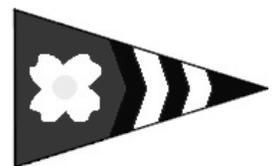
A friend of mine rented a sailboat and after noting its "queer" handling during undocking proceeded to go out for a sail. When he tried maneuvering out in the open water the steering felt like it was slipping and then stopped working altogether. It turns out that what was happening was that the steering had been recently serviced and the cable that operates the steering quadrant was not retensioned. There are supposed to be some guards on the quadrant that keep the cable from coming off, but they were either not installed or loose.

Want to know the REST of the story? Do you know where your emergency tiller is??? Have you ever tried to USE it??? Some of them take QUIT a lot of muscle to use AND they may require NO ONE ELSE to be in the cockpit!!! This is your last resort, so make sure you know how to use it!!!

Let me know if YOU have any interesting steering stories and I'll put them here to help others avoid the same pitfalls.

Dwight Bues

**SHIP
STORE**



**Need a new burgee for
your boat? How about a
tote bag or sports shirt?**

**Contact P/C Paula Bailey,
AP at 703.444.5169**



Sea Scout Ship 1942 Activities Report

by Tom Ballew
Skipper, Sea Scout Ship 1942

Our Sea Scouts in Ship 1942 just completed a very successful annual Sea Scout winter training event up on Catoctin Mountain in Maryland along with at least 200 other youth and adults from many area Ships. Ship 1942 took the largest contingent of 34 people to our winter training event this year. Several of our youth in Ship 1942 are preparing to take their Power Squadron final exams on "**Seamanship**" and the NVPS is preparing to run it's second "**Boating Safety**" course for the Sea Scouts this winter.

Sea Scout Ship 1942 is in the process of standing up and reestablishing an older historic Girl Scout nautical program. "*Mariner's Ships*" were the Girl Scout equivalent of Sea Scouting and they started this type of sailing activity for girls back in 1934. In the 1970s the girl's program mostly died out but the GSA never totally eliminated it from their unique type units. Our youth "*GSA Mariners Ship*" is and overarching activity to Sea Scout Ship 1942 and it parallels our boy program along the same lines of what we did a year ago with standing up our "**Boy Scout Troop 1942**" (*eventually the will be invisible to our volunteer structure*).

Our Sea Scout Ship 1942 regularly offers the following Merit Badges at our intensive **Merit Badge Afloat** weekends (this year's weekend is scheduled for 17-18 April 2004):
Motorboating,
Oceanography
Small Boat Sailing,
Weather
Visit his web site at <http://www.geocities.com/sperrybj/Ship1942.htm> for more information on the **Merit Badge Afloat (MBA)** & our BSA Lifeguard Training.

Congratulate **Able Sea Scout Amanda Saulsgiver** in receiving the highest 2003 Wardroom Award and being named as the National Capital Area Council Wardroom's "**Sea Scout of the Year**". This is the second year in a row that a Ship 1942 youth member has been named to this award. Amanda's dedication and outstanding performance in our Sea Scouting program is seen by all who know her. Her accomplishments this past year are most numerous.

Also please congratulate **Ship 1942 adult committee volunteer, Steve Nichols** in being named for the 2003 National Capital Area Council Sea Scout Wardroom's "**Commodore Award**". Steve has done so much for both our Ship 1942 youth, and the NCAC Wardroom as a whole, in his efforts in overall Council training and also maintaining our Council's 46-foot Morgan ketch "*der PeLiKaN*" training vessel. Steve and his wife Joan took our youth on last summer's Ship 1942's Long Cruise of the northern Chesapeake Bay.

...and for more good news on the college front for Ship 1942, old "*Eagle Eye*" 4/C Cadet Tim Lundin knows how to hit the mark and is proving to be a factor in the Coast Guard Academy's Pistol Team by shooting his personal best against MIT. Next up - West Point. Way to go Tim!

Don't Give Up the Ship,

Tom Ballew
Skipper, Sea Scout Ship 1942



The Sailor's Night Sky, Enjoying The Stars - Cataclysmic Stars I

The extreme, the unusual, the outermost, the limit, fascinates us. Ordinary stars may not catch our attention but when one blows up, wow, we become intrigued. And so you might find this article interesting. Why do stars explode? Actually the big cataclysmic stars implode and then rebound. An article that explains a cataclysmic star from beginning to end may be of interest to some but I do not think it is the best way to capture one's imagination and awe. History first, always. The Greeks taught the World that stars were immutable, fixed, unchanging. 1 A large chink in ancient cosmology occurred when Tycho Brahe (1546-1601) observed a new star in the constellation of Cassiopeiae, 11 November 1572. Although Tycho does not get credit for its discovery, he made very accurate measurements of its position and published a book *De Nova Stella* in which he described its original and declining brightness. 2 After repeated measurements through out the year, until the star could no longer be seen, Tycho and other astronomers could not find any parallax which would have fixed its distance; further more it twinkled like the other stars. This meant the star was very distant and he placed it in the firmament of the fixed stars established by Aristotle (Tycho still held to some of his thinking; the transition was not complete yet); this was the eighth sphere. The stars were no longer immutable. There have been six well documented sightings of nova/supernova in the past 2,000 years. Only one, SN 1987A, in the Large Magellanic Cloud 170,000 light years distant, has been studied with telescopes and a variety of detectors, including two neutrino detectors, as it occurred.

The cataclysmic stars that I am including in these articles are of two types, Supernova I (SN I) and Supernova II (SN II). The former has been referred to as a Nova but there are

differences in process and energy output; it is SN I that I will address first. In ancient times no distinction was made between any of the "new" stars; none could be made. A bright star would some times appear where no star had previously been seen, last for many months and then disappear. Only when astronomers made telescopic spectrographic analysis of these bright stars and compared other characteristics carefully was it possible to make a distinction. SN I spectra contain no hydrogen lines, they come mainly from Population II stars (very old), and can be 2 to 3 times as bright as a SN II.

For a SN I to occur, certain conditions must exist. There must be two stars bound together by gravity, they must be relatively close to each other, and one must be a white dwarf, the other a giant star. 3 In time the hydrogen surface of the giant star is transferred (striped) onto the white dwarf through an accretion disk. 4 This adds to the total mass of the white dwarf until it reaches its limit of 1.4 times the mass of the Sun. 5 At this stage a runaway nuclear reaction may occur. Complicated "burning" and an increase of temperature result and the white dwarf explodes. Of importance in the supply of energy is the production of radioactive ^{56}Ni and ^{56}Co . Their decay in the explosion dominates the light curve. An alternative event, depending on amount of hydrogen build up, may result in a nuclear explosion as hydrogen fuses rapidly. 6 The star can reach up to 10,000 times its original brightness. 7 This nova explosion can occur over and over again without destroying either star.

Next article the SN II and a little more nucleosynthesis because this is where the energy is and this is the foundation of Earth and life on it as astrophysicists and biologists see it. We and our World are made of its products.

The Sailor's Night Sky Cont'd

1 Aristotle, (384-322 BCE), adopted heavenly spheres of Eudoxus and Callippus and eventually added until there were 54 spheres. But then he also thought the heavier an object the faster it would fall.

2 A Sicilian mathematician, Francesco Maurolyco, was first to report its sighting on 6 November 1572. Tyco's reporting of its declining brightness describes a nova not a supernova star.

3 A White Dwarf is a star at the end of its life cycle. Example: When the Sun completes its conversion of hydrogen to helium it will become a red giant expanding out towards Jupiter. It then will shed off its envelope of hydrogen leaving a core of carbon and oxygen. When no more nuclear energy is available this core will be 0.6 times the mass of Earth. Under great pressure in its core, electrons are stripped from the atoms, they collect together forming a "gas"; the star is now in a state of "degeneracy." This state determines star size no longer now the temperature.

4 Édouard Roche (1820-1883) determined that the gravitation tidal forces of the more massive star will strip material from the other if it gets

closer than 2.5 times its radius. If the giant star is becoming a red giant, its expansion may spill the outer shell of hydrogen into its "roche lobe" and onto the white dwarf; this is a nova.

5 Chandrasekhar, (1910-till a few years ago), determined the more massive the original star the smaller it will become when all nucleosynthesis has stopped. A white dwarf can only have 1.4 times the mass of the Sun; with further addition of mass it becomes a neutron star, still further, a black hole disappearing altogether. Theory today states stars up to 8 times the mass of the Sun could form a white dwarf.

6 Fusion of hydrogen to helium "burns" (converts) only 1% the mass and this 1% is not what we see; many other kinds of radiation such as X-ray, Ultra-Violet, Infrared-Red, Radio, massive numbers of neutrinos and a shock wave also occur.

7 SN 1937A was 100 times brighter than its galaxy IC 4182. For comparison nova can become 100 thousand times brighter than the Sun; a supernova can become 1,000 million times brighter than the Sun.

D/Lt Charles H. Olin, AP



Summer Cruise Reservation Form (Continued from page 9)

Captain's Name _____

Boat Name _____

Boat Make, Model _____

LOA _____, Draft _____, Beam _____

Electrical Requirements: _____ connections of _____ amps each

Check which days you plan to attend:

19 June 2004, Spring Cove Marina, Solomons, Maryland (\$30 deposit required)

20 June 2004, Spring Cove Marina, Solomons, Maryland (\$30 deposit required)

21 June 2004, Point Lookout Marina, Point Lookout, Maryland (\$10 deposit required)

22 June 2004, Point Lookout Marina, Point Lookout, Maryland (\$10 deposit required)

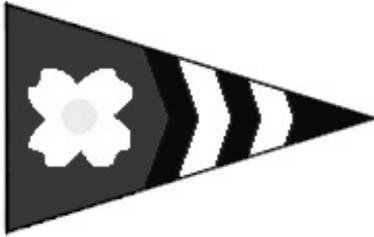
23 June 2004, Somers Cove Marina, Crisfield, Maryland*

24 June 2004, Somers Cove Marina, Crisfield, Maryland*

* (\$25 per boat deposit required irrespective of which nights you plan to attend)

Please forward this form with the required deposits, plus an activity fee of \$30 to Joel Bailey, 20817 Waterbeach Place, Sterling, VA, 20165 by 1 May 2004. For example, if you plan to attend all night, you should enclose a check for \$135 (\$60 for Spring Cove, \$20 for Point Lookout, \$25 for Somers Cove, and the \$30 activity fee). **Cruisers must make their own slip reservations after 1 May 2004.** Your slip rental fees will be credited for all deposits paid in advance.

Please call Joel Bailey at 703-444-5269 if you have any questions or email joelpbailey@hotmail.com.



YOU ARE INVITED TO THE
NORTHERN VIRGINIA
SAIL AND POWER SQUADRON

Change of Watch

WHEN: Sunday 21 March 2004

WHERE: The Waterford at Fair Oaks Mall

12025 Lee Jackson Memorial Highway

Fairfax, VA 22033

Tele: 703.352.3200

TIME: 1000 (10:00 a.m.)

COST: \$ 40.00 per person

DRESS: Uniform, Blazer or suitable attire.

Menu: Virginia Style Buffet Brunch

Fresh juices

Pastrie, Fresh Fruit

Cheese Omlets

Bagels with Cream Cheese

Salads with choice of dressing

Turkey, Salmon, or Lamb

Steamed fresh vegetables

Beverage Bar



Reservations NEEDED before 15 March 2004

Mail to: Judy Soballe, P, 3338 Reservoir Road, NW, Washington, DC 2007-2311
Tele: 202-337-0960 or e-mail at jksoballe@yahoo.com

Number attending: _____ @ \$ 40.00 each _____



Details inside
Starts at 1000
At the Waterford at Fair Oaks

Sunday March 21, 2004
NVSPS Change of Watch



Lt W. Lazear, AP
2014 Lakebreeze Way
Reston, VA 20190-4020

NON-POFIT
ORGANIZATION
U.S. POSTAGE
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RESTON, VA

ADDRESS SERVICE REQUESTED

