



# The Observer

A Publication of The Cuyahoga Astronomical Association  
 PO Box 868, North Olmsted, OH 44070

CAA Homepage: <http://www.geocities.com/cuyastro>

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 Vice President:  
 Treasurer:  
 Secretary and Editor, The Observer:  
 Observatory Director:  
 Board Member:  
 Board Member:  
 Board Member:

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**2002 CAA Calendar - Summary**

5/11/02 8 p.m.	CAA Presentation and Star Party – Brecksville
5/13/02 8 p.m.	CAA General Membership Meeting – RRNC
5/18/02 8 p.m.	CAA Presentation and Star Party – Letha House
5/28/02 7 p.m.	CAA Board Meeting – Starbucks
6/10/02 8 p.m.	CAA General Membership Meeting – RRNC
6/24/02 7 p.m.	CAA Board Meeting – Starbucks
7/8/02 8 p.m.	CAA General Membership Meeting – RRNC
7/13/02 8 p.m.	CAA Presentation and Star Party – Letha House
7/29/02 7 p.m.	CAA Board Meeting – Starbucks
8/3/02 5 p.m.	CAA OTAA Convention – CAA Observatory at Letha House
8/10/02 8 p.m.	CAA Presentation and Star Party – Brecksville
8/12/02 8 p.m.	CAA General Membership Meeting – RRNC
8/26/02 7 p.m.	CAA Board Meeting – Starbucks
9/9/02 8 p.m.	CAA General Membership Meeting – RRNC
9/30/02 7 p.m.	CAA Board Meeting – Starbucks
10/5/02 7 p.m.	CAA Presentation and Star Party – Letha House
10/14/02 8 p.m.	CAA General Membership Meeting – RRNC
10/26/02	Halloween Bonfire – Plum Creek
10/28/02 7 p.m.	CAA Board Meeting – Starbucks
11/9/02	Twilight to Midnight – The Chalet in the Cleveland

	Metroparks
11/11/02 8 p.m.	CAA General Membership Meeting – RRNC
11/25/02 7 p.m.	CAA Board Meeting – Starbucks
12/9/02	CAA Christmas Party
	No Board Meeting in December

**2002 CAA Calendar - Detail**

**Saturday, May 11**

CAA presentation and star party at 8 p.m. at the Brecksville Nature Center. CAA member Ken Hubal will be our speaker for this event. Please bring your telescopes for the public star party that will follow the talk in the Meadows picnic area.

**Monday, May 13**

CAA General Membership Meeting at **8 p.m.** in the Cleveland Metroparks Rocky River Nature Center. May's speaker will be Dan Glover from NASA who will be giving an update on mission status and information gathered from the Galileo and Cassini missions.

**Saturday, May 18**

CAA presentation and star party at 8 p.m. at the Letha House Warm Up Room and CAA Observatory. CAA member Jay Reynolds will be our speaker for this event. Please bring

your telescopes for the public star party that will follow the presentation.

**Tuesday, May 28**

CAA Board Meeting at 7 p.m. at Starbucks Coffee Co. Starbucks is located at 24950 Lorain Road, just west of Columbia Road in North Olmsted.

**Monday, June 10**

CAA General Membership Meeting at 8 p.m. in the Cleveland Metroparks Rocky River Nature Center. Program to be announced.

**Monday, June 24**

CAA Board Meeting at 7 p.m. at Starbucks Coffee Co. Starbucks is located at 24950 Lorain Road, just west of Columbia Road in North Olmsted.

**Monday, July 8**

CAA General Membership Meeting at 8 p.m. in the Cleveland Metroparks Rocky River Nature Center. Program to be announced.

**Saturday, July 13**

CAA presentation and star party at 8 p.m. at the Letha House Warm Up Room and CAA Observatory. Please bring your telescopes for the public star party that will follow the presentation. We need a speaker for this event. Please make Al Matyas' job

job easier by considering giving a talk for this event. If you are interested in giving a talk, please contact Al.

**Monday, July 29**

CAA Board Meeting at 7 p.m. at Starbucks Coffee Co. Starbucks is located at 24950 Lorain Road, just west of Columbia Road in North Olmsted.

**Saturday, August 3**

**CAA OTAA Convention** at the CAA Observatory next to the Letha House Park Barn, 10311 Spencer Lake Rd., just west of Richmond Rd., in Chatham Township. There will be a pot luck dinner. Please bring your own place settings and soft drinks. We will be there rain or shine. More details to follow.

**Sky Events for May 2002**

Moon Phase Calendar for May, 2002

Sun	Mon	Tue	Wed	Thur	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

**Friday, May 3**

The moon passes 4° south of Neptune, 8 p.m. EDT.

Mercury is at greatest eastern elongation (21°), midnight EDT.

**Saturday, May 4**

Venus passes 6° north of Aldebaran, 10 a.m. EDT.

Mars passes 2° north of Saturn, 1 p.m. EDT.

**Sunday, May 5**

Eta Aquarid meteor shower peaks.

The moon passes 4° south of Uranus, 6 a.m. EDT.

**Tuesday, May 7**

Venus passes 2° north of Saturn, 2 p.m. EDT.

**Friday, May 10**

Venus passes 0.3° north of Mars, 5 p.m. EDT.

**Monday, May 13**

The moon passes 3° south of Mercury, 5 p.m. EDT.

**Tuesday, May 14**

The moon passes 1.1° north of Saturn, 4 a.m. EDT.

The moon passes 0.6° south of Mars, 3 p.m. EDT.

The moon passes 0.8° south of Venus, 7 p.m. EDT.

**Wednesday, May 15**

The moon passes 1.1° north of Vesta, 8 a.m. EDT.

**Thursday, May 16**

The moon passes 2° north of Jupiter, 8 a.m. EDT.

**Sunday, May 26**

Penumbral lunar eclipse.

**Monday, May 27**

Mercury is in inferior conjunction, 3 a.m. EDT.

**Friday, May 31**

The moon passes 4° south of Neptune, 4 a.m. EDT.

**Sky Events for June 2002**

Moon Phase Calendar for June, 2002

Sun	Mon	Tue	Wed	Thur	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

**Saturday, June 1**

The moon passes 4° south of Uranus, 2 p.m. EDT.

**Monday, June 3**

Venus passes 1.6° north of Jupiter, 2 p.m. EDT.

**Friday, June 7**

Pluto is at opposition, 1 a.m. EDT.

**Sunday, June 9**

Saturn is in conjunction with the sun, 7 a.m. EDT.

The moon passes 3° north of Mercury, 10 a.m. EDT.

Venus passes 5° south of Pollux, 4 p.m. EDT.

**Monday, June 10**

Annular solar eclipse.

**Wednesday, June 12**

The moon passes 0.9° north of Mars, 8 a.m. EDT.

The moon passes 2° north of Jupiter, midnight EDT.

**Thursday, April 13**

The moon passes 1.5° north of Venus, 5 p.m. EDT.

**Friday, June 21**

Summer solstice is at 9:24 a.m. EDT.

Mercury is at greatest western elongation (23°), 11 a.m. EDT.

**Sunday, June 23**

Mercury passes 2° north of Aldebaran, midnight, EDT.

**Monday, June 24**

Penumbral lunar eclipse.

**Thursday, June 27**

The moon passes 4° south of Neptune, noon EDT.

**Friday, June 28**

The moon passes 4° south of Uranus, 10 p.m. EDT.

**Club News / Stories**

**Cuyahoga Astronomical Association  
Financial Report  
May 6, 2002**

Bank Account Balance 3/2/02	\$3278.93
Cash On Hand 3/2/02	\$ 152.41
Total Assets 3/2/02 (approx)	\$3431.34
Bank Account Activity:	
Deposits:	
3/16/02 Interest	\$ 1.21
3/29/02 Membership, Subscriptions	\$ 33.00
4/10/02 Memberships, Subscriptions, etc	\$ 160.00

4/10/02 Transfer From Petty Cash	\$ 100.00
4/13/02 Membership	\$ 25.00
4/16/02 Interest	\$ 1.22
Expenditures:	
3/2/02 Sky Publishing – 2 S&T Subscriptions	\$ 59.90
3/2/02 Homestead Insurance Company	\$ 450.00
4/8/02 Newsletter	\$ 159.41
4/8/02 Refreshments	\$ 49.02
Bank Account Balance 5/6/02	
	\$2946.93
Petty Cash Activity:	
Deposits:	
3/11/02 Refreshments	\$ 24.10
4/10/02 Refreshments	\$ 26.70
Expenditures:	
4/10/02 Transfer To Checking	\$ 100.00
Cash On Hand 5/6/02	
	\$ 103.21
Total Assets 5/6/02 (approx)	\$3050.14
Bank Account Balance Includes	
Observatory Fund Donation	\$ 200.00
Available Assets	\$2850.14

Art Nenadal, Treasurer

### General Membership Meeting Time Will Change From 8:00 p.m. to 7:30 p.m.

The new time will probably be effective for the July membership meeting since the Cleveland Metroparks requires about 4 months advance notice for publication changes. An announcement will be made in next month's *Observer* of when the new meeting time will take effect. The May general membership meeting is still at 8 p.m.

### Congratulations New CAA Honorary Life Members!

At last month's meeting, we voted on giving Honorary Life Memberships to 4 long time CAA members. The vote was unanimous to give all 4 CAA members Honorary Life Memberships. Please join me in congratulating the following CAA members who are now CAA Honorary Life Members. Their names and the results of the vote follow:

CAA Honorary Life Member Name	Yes Votes	No Votes
1. Bob Blaney	43	0
2. John Garvey	43	0
3. Alex Panzer	42	0
4. Steve Farkas	43	0

### Astronomy Day 2002

On April 20, a crowd of 75 people deep waited for the opening of the Cleveland Museum of Natural History. Most were there to celebrate an interest in Astronomy. Hundreds of visitors view the displays and asked questions of members of the CAA, Chagrin Valley Astronomy Society, and the Space Society. Others took in a voyage through the heavens via the Shafran Planetarium. These events really pique the interest of the general public in the sky and I am sure we will see additional members as a result. A special thanks to all the members that showed up and supported this public relations event and helped make it a success!

Chris Burke, Russ Hopkins & Paula Otter, Ken Hubal, Al & Dawn Jenkins, Dennis Klamet, Jeff Lewis, Art Nenadal, Ted Sauppe, and Bob Wiersma.

Also, a thank you to the members that showed up at the Lake Erie Nature and Science Center and let the public look through their telescopes.

Albert Matyas  
CAA, Vice President

### Observing Permits for Letha House

Observing permits for our dark sky site, Letha House Park in Medina County, were available at last month's membership meeting. If you need a permit, please pick one up at the May meeting.

### Looking Up By Charles H. Grace

WHAT'S THE DIFFERENCE BETWEEN:

1. A Schmidt telescope and a super Schmidt telescope?

Schmidt: A Schmidt telescope (1930) has a spherical mirror, with a correcting plate in the incoming light beam before it reaches the mirror, to correct for spherical aberration. An uncorrected spherical mirror has severe spherical aberration, but no coma. A paraboloid has severe coma but no spherical aberration. (Spherical aberration causes light arriving near the periphery of a mirror to focus at a different distance than does light arriving near the center of the mirror, so the light does not all focus at a single point. Coma, on the other hand, causes each toroidal zone of the mirror to produce a spurious image in the form of a circular patch of light around an off-axis star.)

Hence, a Schmidt has neither much coma nor spherical aberration. It focuses the light well over a very wide field, provided it is focused onto a curved surface. If there is a recording detector such as a photographic plate, it must be sprung over the curved surface.

Super Schmidt: A super Schmidt telescope (developed by American James G. Baker about 1958) has additional correcting plates that retain the wide field while greatly increasing the speed so that cameras can record meteor and satellite trails. Its design is complicated.

2. Revolution and rotation?

Nothing, really. But revolution seems to be better for describing the travel of an entire body in an orbit around another body, and rotation is usually used only to describe the spinning of a body on an axis that passes through the body.

3. An amateur anything and a professional?

We all know very well that a professional gets paid for it but amateurs do it because they love to.

4. Cassini and Casini?

In 1659 Huygens discovered a ring around Saturn. In 1675 astronomer Giovanni Cassini realized that what Huygens thought was one ring was actually two, with a gap between them. "Cassini's division" separates the B and A rings of Saturn. Now-

Nowadays, the Huygens/Cassini project is a space expedition to explore Saturn.

The astronomer Giovanni Cassini is not your dad's Giovanni Casini, who was a great music composer, organist and scholar. They were contemporaries in Italy.

5. A telescope, a microscope, and a periscope?

T = Up, far, big. M = Down, close, small. P = Bent, near, bad.

## The Five Planets Are Here! by Art Nenadal

If you haven't yet taken the time to view the five planets at sunset on whatever clear night presents itself, I suggest you try to do so before this opportunity ends, around the middle of the month.

What a pretty sight!

While Venus is moving away from the horizon toward Mars and Saturn, Mercury is now rapidly approaching the sun, but was still visible on May 5<sup>th</sup> at 9:30 pm.

However, don't be too upset if you miss this opportunity. Just be sure to mark your calendar for the next chance to see all the planets in the same area of the sky in 2040.

I'll see you there!

## Another Great Presentation In The Frontiers Of Astronomy Series! by Art Nenadal

Of the 80 extrasolar planets discovered using techniques described in this fascinating lecture, all are Jupiter-sized or larger, and many are very near their parent star, traveling at incredible velocities.

Among the events changing the views of astronomers these days are the discoveries of gas giants closer to their stars than is thought to be possible for a planet of this type to survive.

Discovery of smaller, earth-sized planets around distant stars awaits novel techniques and great improvements in instrumentation.

Undoubtedly, there's some brilliant astronomer, or some astronomer-to-be, with the ideas in mind that will solve this great problem.

I look forward to witnessing the next great frontier of astronomy presented at the Museum of Natural History!

## Swap Corner

No items.

### Upcoming Astronomical Events

## Other OTAA Meetings

Saturday, June 8, 2002: Chagrin Valley Astronomical Society OTAA convention at Indian Hill Observatory

Saturday, August 10, 2002: Mahoning Valley Astronomical Society OTAA meeting. Registration – 5:00 p.m.

Saturday, September 7, 2002: Black River Astronomical Society OTAA meeting in Birmingham.

Friday & Saturday, October 4/5, 2002: Richland Astronomical Society Hidden Hollow convention at the Hidden Hollow Campground in Mansfield, Ohio.

## CWRU Nassau Observatory Public Nights

Every summer the observatory, in cooperation with the Geauga Metroparks and the Chagrin Valley Astronomical Society, holds several public nights. Here is the schedule for this summer:

Friday, June 14<sup>th</sup>

Friday, August 23<sup>rd</sup>

Friday, September 27<sup>th</sup>

Rainout dates are the following Saturdays.

The public is permitted to view through the 36" reflector in the observatory, and the Chagrin Valley club usually has at least ten additional telescopes available for viewing on site.

Because of limited parking, reservations must be made through the Geauga Metroparks at 440-286-9540.

Call early. This event fills up very quickly.

The observatory is on Clay Street in Chardon. Additional information may be obtained by calling the metroparks at the above number, by checking with the Chagrin Valley club, or by checking the CWRU web site:

<http://astrwww.astr.cwru.edu/nassau/nassau.html>

Art Nenadal has attended several of these and can also fill in whatever details you may require.

Also, on Friday, 5/17/02 at 8 p.m. project Astro is setting up a program for that evening and has requested telescopes. If anyone can help out with this event that would be appreciated.

## Apollo Rendezvous & Star Party!

The Miami Valley Astronomical Society and The Boonshoft Museum of Discovery (formerly the Dayton Museum of Natural History) present the 32<sup>nd</sup> Annual Apollo Rendezvous & Star Party!, June 14-15, 2002, Dayton, Ohio.

AR2002: Astronomy, Art & Observing

### Apollo Rendezvous What It's About

*Apollo Rendezvous* is one of the premier annual gatherings of amateur astronomers in the United States. Amateur astronomers meet with friends and colleagues from throughout the country and the world, exchange information, enjoy talks by outstanding speakers, view film and slide presentations, shop for astronomical items, and view some of the finest amateur telescopes, astrophotography and astro-artwork on display anywhere.

### Theme & Speakers

Our topics this year center around the classic themes of art and observing. We are honored to be joined this year by Terry Mann, Don Parker, Leif Robinson, and Mark Trueblood. Would you like to put your telescope in space?! Terry Mann, former Astro League Secretary and VP candidate will be speaking on the International

International Space Station Amateur Telescope project. Don Parker really needs no introduction. He is a wonderful speaker, funny, knowledgeable and always has a boatload of great photos and advice for amateurs of all levels. Leif joined *Sky & Telescope* nearly 40 years ago, and recently retired as the Editor-in-Chief. He is about to get "serious" in his retirement about linking art to amateur astronomy, and will offer a delightful presentation on that subject. Mark runs what is arguably one of the premier robotic observatories in the country. His observatory is providing the testing facilities for the ISS Amateur Telescope as well as home for the University of Iowa & University of Washington telescopes. He will be sharing a wealth of information useful to anyone building any kind of home observatory, with hard-won, practical advice and lessons-learned on moving to semi-automatic and robotic operation. *Join us for some great presentations!*

#### **Amateur Astronomer Workshop: How to Build & Automate an Observatory**

Saturday morning will be devoted to an *Amateur Astronomer Workshop* on *How to Build and Automate an Observatory*. Mark Trueblood will provide valuable information and lots of lessons learned on building on observatory, small or large, and will discuss in depth some of the issues in automating it.

#### **Vendors & Prizes**

As always, Rendezvous will offer more valuable door prizes than almost any such event in the U.S., with 1<sup>st</sup> prize in the raffle this year being the fabulous Sky Window binocular mirror with 60mm binos. View the entire sky in absolute comfort! Use the binos during the day for terrestrial observing.

The vendors are always central to Rendezvous. Products from vendors such as Meade, Celestron, Orion, Software Bisque, Apogee Instruments, TECH 2000, Sky Publishing, Astronomy to Go, Hands on Optics, Mitterling Meteorite, Pete's Photo World, University Optics, and many others,

others, are typically available *at Rendezvous discount prices.*

#### **Saturday Evening BBQ & Star-Gaze**

Saturday will conclude with an informal BBQ out at the John Bryan State Park Observatory, followed by the traditional stargaze.

The Saturday night BBQ is fast becoming a Rendezvous tradition. We supply the basics (chips, buns, hot dogs, sodas, condiments, grills, plates, etc.), you supply any fancy stuff you want. (We'll be there rain or shine.)

#### **Special Events & Activities**

##### **Vendor Displays**

The BIG NAMES are at Rendezvous! We are anticipating nearly 20 vendors again this year with everything for amateur astronomers, from telescopes to T-Shirts, maps & meteorites. Don't miss this great opportunity to meet and talk with some of the biggest names in amateur astronomy! Great Specials! Great Products!

##### **More on the Speakers**

Terry Mann, currently a candidate for Astronomical League VP, has been an amateur astronomer since childhood, and is currently the Operations Chair of the International Space Station-Amateur Telescope (ISS-AT).

Lief Robinson is editor emeritus of *Sky and Telescope* and was the Editor-in-Chief for 40 years. His contributions to amateur astronomy have been profound.

Mark Trueblood runs what is arguably one of the most advanced, productive, robotic observatories in the world, and that's in addition to his day job! If you want to know something about building and running a robotic observatory, Mark is a premier expert.

Don Parker has been taking award-winning photos of the planets for years and is known by seemingly everybody in the amateur community. Don is always funny, informative and above all, helpful to amateurs across a wide range of subjects.

##### **Astrophotography Contest**

Apollo Rendezvous always brings out some of the best in astrophotography and astronomy artwork. Be sure

artwork. Be sure to bring along your photos and other works and enter them into the contest.

#### **Friday AND Saturday Night Stargazes**

Enjoy the 20" scope at the museum. Take your scope out to our John Bryan observatory facility or use one of the many MVAS Scopes out there, including the superb 12.5" long focus and 16" f/5 Reflectors. (And don't forget the BBQ!)

See their Website <http://www.mvas.org> for registration information.

#### **Other News / Stories**

### **Record Set For Most Distant Spacecraft Maintenance**

MEDIA RELATIONS OFFICE  
JET PROPULSION LABORATORY  
CALIFORNIA INSTITUTE OF  
TECHNOLOGY NATIONAL  
AERONAUTICS AND SPACE ADMINISTRATION  
PASADENA, CALIF. 91109. TELEPHONE (818)  
354-5011 <http://www.jpl.nasa.gov>

FOR IMMEDIATE RELEASE  
April 9, 2002

Astronauts can make service visits to the Earth-orbiting Hubble Space Telescope, but what do you do if the spacecraft needing a replacement part is the farthest human-made object from Earth, more than twice as distant as Pluto?

The answer, as the flight team for the Voyager Interstellar Mission recently demonstrated, is to plan ahead and keep top-notch engineers available.

Last month, the team cautiously activated a backup position-sensing system, including a Sun sensor and star tracker, on Voyager 1. The spacecraft had been carrying those components and other spare parts since it was launched in 1977 on what was then slated as a four-year mission.

"After sitting on the shelf for 25 years, it's like new equipment," said Ed Massey, Voyager project manager at NASA's Jet Propulsion Laboratory, Pasadena, Calif. Voyager 1 and its

twin, Voyager 2, completed their history-making tour of outer planets in 1989 and are now headed toward the boundary zone -- called the heliopause -- where the Sun's influence cedes way to interstellar space. Both spacecraft have adequate power and communication capabilities to explore that frontier for about 20 more years, if other onboard systems hold up.

The original designers' foresight in building backup systems into the Voyagers helps, but making changeovers aboard a spacecraft more than 12.5 billion kilometers (7.8 billion miles) away presents enormous challenges. Anything that could go wrong needs to be foreseen, because reaction time is unforgivingly slow. Communication signals take nearly 12 hours each way traveling to or from Voyager 1 at the speed of light. And the task now falls to a Voyager flight team of just 14 people, compared with a Voyager team of more than 300 in the 1980s.

The success of the recent modifications gives the team confidence in switching to other backup systems on both spacecraft when concerns arise about original systems, Massey said.

Voyager 1's original attitude-control system showed slowly increasing signs of trouble in the past two years, said Tim Hogle, a flight-team engineer at JPL. Diagnostics pointed to an electronic component that takes analog signals from position-sensing devices and converts them into digital values for an onboard computer. Because of the system's design, switching to that component's backup also meant activating the backup Sun sensor and star tracker, which provide the reference points for the spacecraft's orientation in space.

"We had to plan this switch very carefully," Hogle said. This backup equipment hadn't been tested since Voyager 1 was approaching Saturn in 1980. If it didn't work right, switching to it could confuse the onboard computer about the spacecraft's orientation, which could lead to faulty pointing of the antenna and loss of communications with Earth.

Among other precautions, the team programmed a temporary changeover with an automatic reversion to the original system, allowing just enough time to evaluate the backup. The planning effort identified potential trouble points in advance and made provisions to be able to correct them, if necessary, before the final changeover, nine days after the temporary one. The cautious approach paid off. The system made an unexpected lock onto the Sun during the temporary switch, so the spacecraft was instructed to keep itself steady with gyroscopes during the final switch.

Calibration of the backup system was completed April 1.

"By switching to the backup before the original system failed, we now have the original as a backup if we need it," said flight-team member Steve Howard of JPL.

The changeover plan benefited from soliciting experienced advice from several Voyager veterans now working on other JPL projects. "We have resources here you just could not find anywhere else," Howard said.

Massey said, "The switchover went relatively smoothly. It is certainly a testament to the people who designed and built the spacecraft, and to the expertise and dedication of the flight team."

Information about Voyager's grand tour of the outer planets and the current Voyager Interstellar Mission is available online at <http://voyager.jpl.nasa.gov>. JPL, a division of the California Institute of Technology in Pasadena, manages Voyager for NASA's Office of Space Science, Washington, D.C.

### Note From The Desk of The Editor

I am always looking for articles for *The Observer*. If there are any aspiring authors out there who want to contribute an article, share a story or observation, etc. please do so, and I will include it in the next issue. Also, if you have any items for sale, or if you are looking for any items, send these in and I will include them in the

*Swap Corner*. Remember, this is your newsletter, and participation from the general membership can only make the newsletter better. Thanks to all who have taken the time to send in articles. Please send articles, items for sale, items wanted, suggestions, and/or comments to:

Jeff Lewis

5623 Allendale Drive

North Olmsted, OH 44070-4622

Or you can send them via e-mail to [bruise@ameritech.net](mailto:bruise@ameritech.net).

Thanks and Clear Skies!