

NCRAL 2016 Meeting

April 29-30

(version date 3/25/2016)

GETTING READY FOR THE 2017 TOTAL SOLAR ECLIPSE



Co-hosted by the

TWIN CITY AMATEUR ASTRONOMERS

and the

CHALLENGER LEARNING CENTER

AT HEARTLAND COMMUNITY COLLEGE

Normal, Illinois



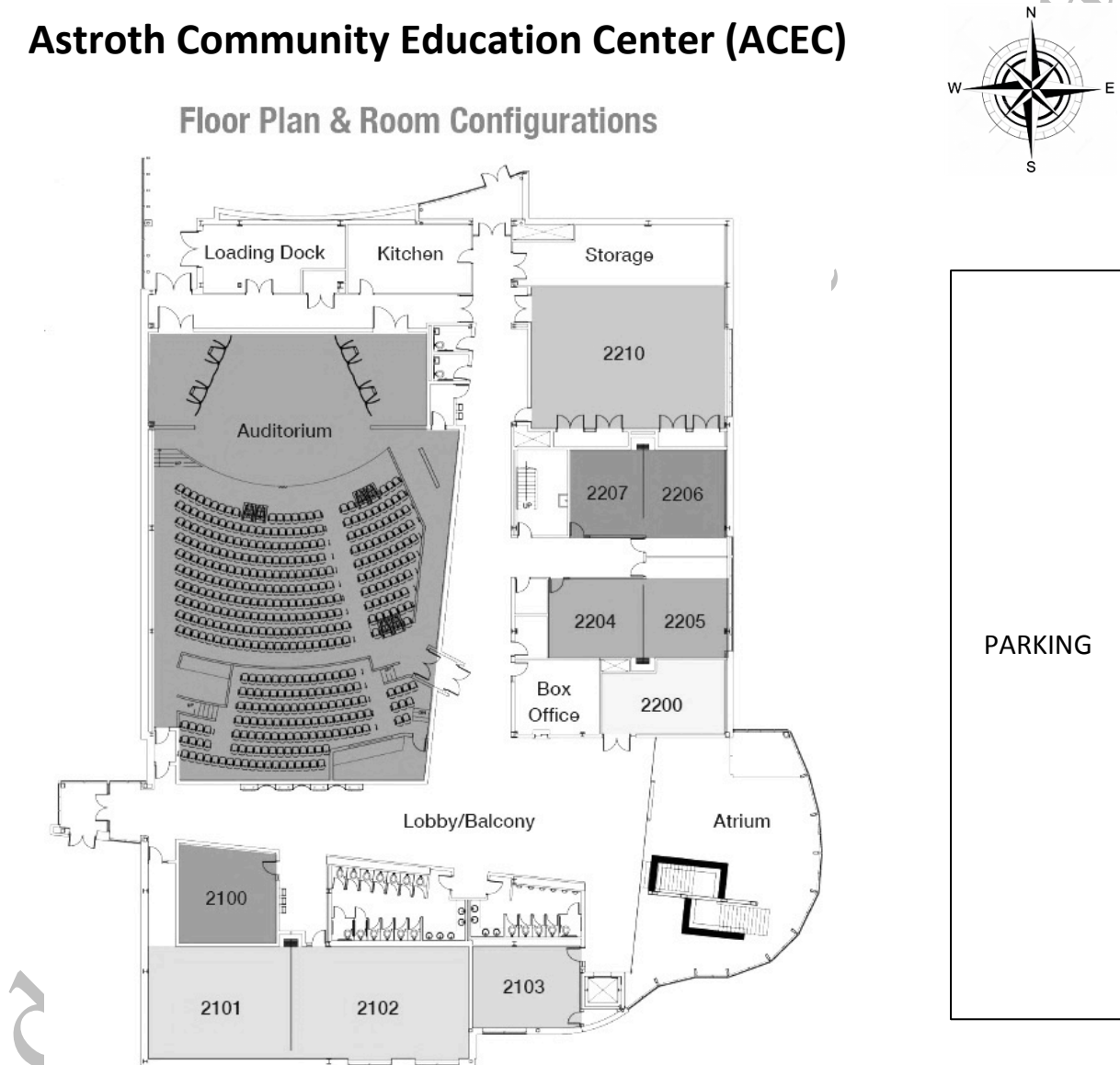
Astroth Community Education Center

Welcome message from TCAA President Tim Stone...

On behalf of Twin City Amateur Astronomers, I'd like to welcome you to the North Central Region of the Astronomical League 2016 Conference. We are so happy to be this year's host, and we sincerely hope you find the conference to be above and beyond what you had expected. This year's theme, "Getting Ready for the 2017 Total Solar Eclipse," is exciting subject matter made even more pertinent and thrilling by the prospect of seeing this rare phenomenon in our own back yard. You'll hear from several experts in eclipse observation, an expert in taking care of your eyes, and you'll learn how to simply create equipment that will help you and others safely observe the bright phases of the eclipse. The astrophotography contest will give you the opportunity to display your own work and see the results of others who engage in the photographic side of astronomy. You'll visit the TCAA observatories and visit the Challenger Learning Center. But more than that, you'll make new friends, and reignite past friendships with those who share our passion for the heavens. Thank you so much for taking time from your busy schedule to come and enjoy our conference.

Astroth Community Education Center (ACEC)

Floor Plan & Room Configurations



ELEVATOR ACCESS to the second floor of ACEC is available via the Atrium. Look for the elevator symbol ☒ in the above map just to the right of room 2103. The lift moves between the first floor Atrium and the second floor Lobby/Balcony.

RESTROOMS are located on the 2nd floor in the Lobby/Balcony area adjacent to the Atrium and just opposite the stairwell.

The **CHALLENGER LEARNING CENTER** is located on the 1st floor, and can be accessed through the interior door on the north side of the Atrium (just below room 2200).

NCRAL 2016



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GETTING READY FOR THE 2017 TOTAL SOLAR ECLIPSE

Friday, April 29, 2016:

3:00-8:00 PM 2 nd floor hallway	Registration desk open; set up of astrophotography contest, vendor displays, and posters.
3:00-5:30 PM 1 st floor CLC	Open house at Challenger Learning Center (CLC, ground floor, enter through atrium)
6:00 PM 1 st floor CLC	Challenger Learning Center <i>Social Mission</i> (<u>by pre-paid reservation only</u> ; enter through atrium)
7:00 – 8:30 PM Auditorium	Contributed Talks: <div style="background-color: black; width: 100%; height: 100%; min-height: 200px;"></div>
8:30 – 10:00 PM Room 2210	Discussion Groups: <div style="background-color: black; width: 100%; height: 100%; min-height: 20px;"></div>

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Saturday, April 30, 2016:

8:00-11:30 AM
2nd floor hallway Registration desk open (ground floor entrance, east side)

8 AM-4 PM
2nd floor hallway Vendor and club displays, astrophotography contest voting.

9:00 AM
Auditorium Welcome by TCAA President Tim Stone; orientation by Master of Ceremonies David Osenga

9:15 AM
Auditorium

GETTING READY FOR 2017

Dr. Carl J. Wenning, Illinois State Univ. Physics Department

The countdown is on for 2017 – a year for which many of us have been long waiting. Next year will feature the first of three spectacular solar eclipses visible from within the USA – those being the events of 2017, 2023, and 2024. Two of these eclipses will be total and one will be annular. Illinois is particularly blessed. It will be possible to observe two total solar eclipses from the same location seven years apart in 2017 and 2024. Our speaker will talk about circumstances of visibility along the path of totality for the 2017 event and provide general information about viewing eclipses. He will briefly summarize the content of his publication *The Great Eclipse: The August 21, 2017 Total Eclipse of the Sun*.

About our speaker: Carl is a well-known Central Illinois astronomy educator. He was planetarium director at Illinois State University from 1978 to 2000. He holds a B.S. in Astronomy from The Ohio State University, an M.A.T. in Planetarium Education from Michigan State University, and an Ed.D. in Curriculum & Instruction with a specialization in physics teaching from Illinois State University. He fully retired from Illinois State University in 2014 after nearly 40 years of university-level teaching. He is an Astronomical League Master Observer and received the 2007 NCRAL Region Award.



10:00 AM
2nd floor lobby

Refreshment Break

This break is entirely sponsored by Woodland Hills Camera & Telescopes, 5348 Topanga Canyon Boulevard, Woodland Hills, California <http://TelescopeS.NET/>

Door prize drawing; astrophotography contest voting begins



10:30 AM
Auditorium

Solar Imaging

Mr. Michael Borman, Evansville Astronomical Society

The sun is one of the most dynamic objects you can observe, and features can change literally before your eyes – in a matter of minutes. Today, with the right filters, amateurs can view and image the sun in three different wavelengths, allowing more than just sunspots to be observed. Mike will speak about how to capture these solar features with a camera, process them, and then make some recommendations for imaging the 2017 total solar eclipse.

About our speaker: Mike is an electrical engineer and associate at Three I Design in Evansville, Indiana. He is a past President of The Evansville Astronomical Society and currently serves on the EAS Board. He



has been an amateur astronomer since the late 1970's and has been imaging the sun since the early 1980's. Mike's solar images and other astrophotos have appeared in *Astronomy*, *Sky & Telescope*, *BBC Sky At Night Magazine*, *Astronomie (France)*, *The 2014 Astronomy Photographer of The Year* Collection 3, and on various websites including National Geographic.

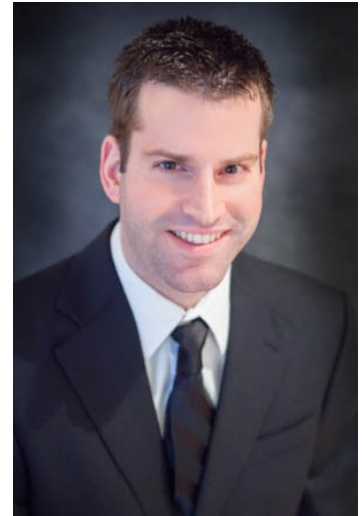
11:15 AM
Auditorium

Solar Retinopathy

Dr. Jason A. Dunn, McLean County Eye Care

What are the potential risks to the human eye if use to view a solar eclipse improperly? Learn about the science behind irreversible eye damage, the length of exposure required, and many other interesting facts about the eye.

About our speaker: Dr. Jason A. Dunn graduated from Illinois College with *Summa Cum Laude* honors in biology. He received his Doctor of Optometry from Southern College of Optometry. He was inducted into Beta Sigma Kappa for academic excellence and received the "Clinician of the Semester Award". Dr. Dunn completed his externship rotation at Williams Jennings Bryan Dorn VA Medical Center in Columbia, SC, where he received extensive training in diabetic and glaucoma management. He also completed a rotation at Schulz Eye Care in New Port Richey, FL. His training focused on the treatment and management of macular degeneration and dry eye.



11:30 AM
Atrium

Group photo; lunch break (on your own); astrophotography contest voting continues
SEE LISTING OF LOCAL DINING ESTABLISHMENTS ON PAGE 8.

1:15 PM
Auditorium

Sun Funnel Viewers: How to Make Your Own

Tom Weiland & Dave Osenga, Twin City Amateur Astronomers

Viewing a solar eclipse safely through a telescope with a large group can be accomplished using a small refractor and a "sun funnel." This simple device can provide a low-tech and fun approach to solar viewing. This device was successfully used by many amateur astronomers during the Venus transit and can also be used for viewing sunspots. Dave and Tom will be sharing information about acquiring the materials necessary for construction of a sun funnel and demonstrating the simple steps necessary for assembling one. One lucky attendee will receive an eyepiece-ready sun funnel and another will receive the materials necessary to build their own.



About our speakers: Tom Weiland (l.) is a retired Junior High educator. Upon retirement, he became a member of the TCAA. He has served as president for the last four years. Tom is primarily a visual observer who enjoys engaging with the public at monthly public observation sessions and other large public events. Dave Osenga is a business analyst at State Farm Insurance Companies here in Bloomington, Illinois. He has been doing visual observing and has completed several Astronomical League observing programs. He has served on the TCAA Board of Directors for several years, and is an active participant in the club's public outreach activities.

1:45 PM
Auditorium

The Observatories and Work of the TCAA

Mr. Tim Stone, Twin City Amateur Astronomers

The observatories of Twin Cities Astronomy Club are excellent facilities for astronomical observation for both beginners and advanced astronomers. Excellent astrophotography platforms are available, as is an observatory dedicated to visual observing. This session will provide an overview the observatories, the equipment they house, and how that equipment is being used.



About our speaker: Tim Stone has been a computing professional for 38 years. His technology aptitude coupled with his lifelong love of astronomy has uniquely positioned him to contribute to the observatories of Twin City Amateur Astronomers. As property manager he has helped with the expansion of these observatories from a single 17" telescope to four high-end imaging platforms and an extremely capable visual observing installation.

2:15 PM
2nd floor hallway

This break is jointly sponsored by Astro-Physics and Santa Barbara Instrument Group (SBIG).

Distribution of door prizes; astrophotography contest voting continues



2:30 PM
Auditorium

NCRAL Business Meeting

3:45 PM
Lobby

Astrophotography contest voting concludes; begin boarding busses for Sugar Grove Nature Center

4:00 PM
Parking Lot

Depart for Field Trip to TCAA Observatories; Re-board busses for return trip to HCC campus (4:45 PM); Arrive at HCC campus; end of daytime activities (6:30 PM)

7:00 PM
Room 2210

Social and Banquet (serving time 7:30 PM)

8:30 PM
Auditorium

Door prizes, officer comments, announcement of astrophotography contest winner, etc.

8:45 PM
Auditorium

35 Year of Solar Eclipse Chasing – An Overview

Dr. Michal Reynolds, Gainesville, FL

Why do people become addicted to chasing total solar eclipses? What is there about the Sun disappearing in splendid fashion that draws individuals to all parts of the Earth? And at any cost or possible bodily danger...

If you have spent any time under the shadow of a total solar eclipse, you have your own answers to the above questions. Especially if it was clear. Partial solar eclipses do not count here. Neither do total lunar eclipse, even though there are spectacular in their own way. Some state total solar eclipses are the most-spectacular astronomical event or object they ever observed; others note it is almost like a religious experience. And historically, total solar eclipses were a religious experience for some, and a bad omen for others.



What makes a total solar eclipse so spectacular? Ask ten different people, and you will get ten different answers. Some will say it's the meteorological changes; others the approaching lunar shadow that foretells totality. Elusive shadow bands. The sunrise-sunset colors around the horizon, the last vestiges of the Sun in the form of the Diamond ring and then Baily's Beads. Planets and stars appearing in what was broad daylight. The Sun's magnificent crown: the corona. Dancing prominences around the Sun's edge.

How does one assure a successful eclipse viewing? Umbraphiles – as total solar eclipse chasers are often called – talk about serious advance planning. Not only how you are going to observe the eclipse, but where, alternate plans, and even dividing up those precious moments under the shadow to observe different phenomena.

Dr. Mike Reynolds will hit highlights of his 18 successful total solar eclipses over a 35-year period, from planning to observing and imaging. What makes chasing eclipses so addictive? And why are we in the Continental United States in for such a treat on August 21, 2017?

About our speaker: Dr. Mike Reynolds has forty years in astronomy and space sciences in the gamut of a high school and university instructor, planetarium and museum director, researcher, and college administrator. He has received numerous recognitions for his work, including the 1986 Florida State Teacher of the Year, NASA Teacher-in-Space National Finalist, and the G. Bruce Blair Medal in Astronomy. Reynolds has written a number of astronomy books and articles, including service as an *Astronomy* magazine contributing editor.

He was an invited TED speaker, talking about *The Universe is our Classroom*. Reynolds has appeared on several Discovery Channel and National Geographic programs, such as *Auction Kings*.

Reynolds' total solar eclipse chasing, starting with the March 7, 1970 total solar eclipse, has taken him to eighteen total solar eclipses, with some 53 minutes spent in totality "under the shadow." In honor of his popularization of astronomy and the space sciences, the International Astronomical Union honored Reynolds with the naming of asteroid 2004 SY26 "Michael Reynolds," nominated by fellow astronomers David Levy and Tippy D'Auria.

Reynolds is currently is a Professor of Astronomy at Florida State College and the Executive Director Emeritus of the Chabot Space & Science Center in Oakland, California. He also is the Eclipse Coordinator for the Association of Lunar and Planetary Observers (ALPO), and also currently serves as the Executive Director of the ALPO.

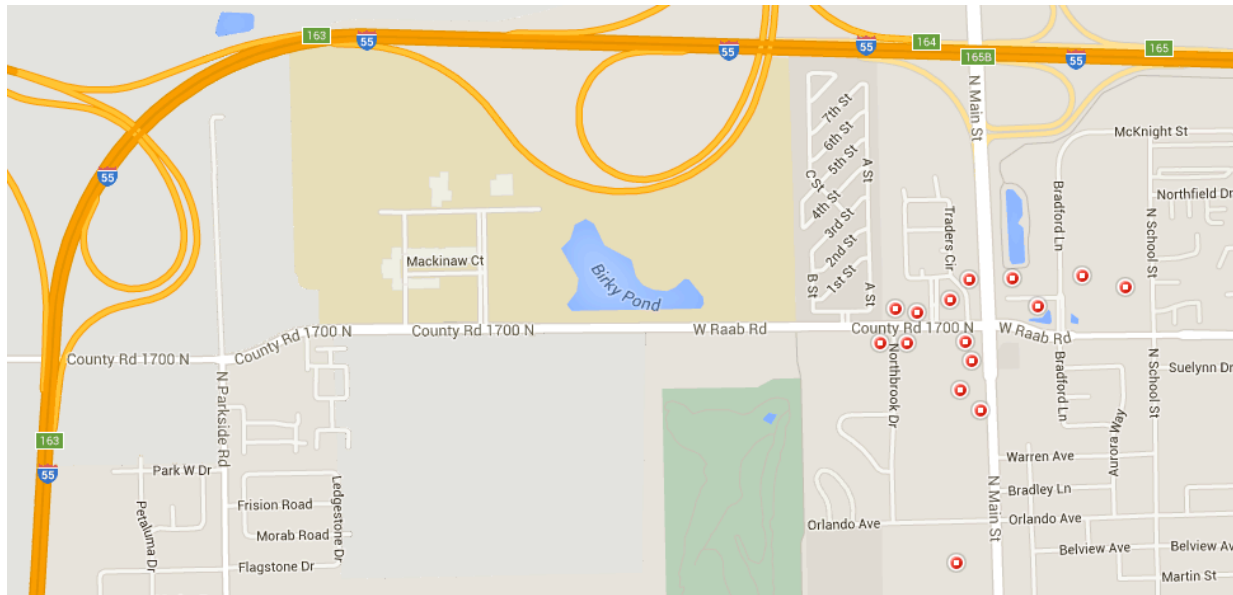
10:00 PM Optional observing session at Sugar Grove Nature Center

Door Prizes

Door prizes have been provided by the following manufactures and distributors:

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NEARBY DINING ESTABLISHMENTS (Go east from HCC on Raab Road.)



Chings Chinese Restaurant

4.2 ★★★★★ (15) · Restaurant
1101 N Main St

Denny's

3.6 ★★★★★ (6) · \$ · American
Casual diner chain dishing up classic American comfort fare, including breakfast, 24 hours a day.
1615 N Main St

Uncle Tom's Pancake House

3.9 ★★★★★ (17) · \$\$ · Breakfast Restaur...
1700 Fredrick Ln

China Star

3.8 ★★★★★ (17) · \$\$ · Chinese
Cozy, low-key eatery serving classic Chinese food such as orange chicken, crab rangoon & Hunan beef.
616 W Raab Rd

Rosati's Pizza

3.5 ★★★★★ (24) · \$\$ · Pizza
Italian chain eatery featuring Chicago-style deep-dish pizza, plus pasta & sandwiches.
1720 Bradford Ln

Moe's Southwest Grill

3.7 ★★★★★ (20) · \$ · Mexican
Counter-serve chain dishing up Southwestern staples from burritos to nachos in lively environs.
1730 Bradford Ln

Subway

2 reviews · \$ · Sandwich
Casual counter-serve chain for build-your-own sandwiches & salads, with health-conscious options.
1715 Bradford Ln

Burger King

3.0 ★★★★★ (6) · \$ · Fast Food
Well-known fast-food chain serving grilled burgers, fries & shakes, plus breakfast.
1617 N Main St

Wendy's

3.6 ★★★★★ (5) · Fast Food
Fast-food burger chain known for its shakes, as well as sides such as chili & baked potatoes.
1735 Bradford Ln

Arby's

No reviews · \$ · Fast Food
Fast-food chain, known for its roast beef, serving up hot & cold sandwiches, fries & shakes.
610 W Raab Rd

McDonald's

3.2 ★★★★★ (8) · \$ · Fast Food
Classic, long-running fast-food chain known for its burgers, fries & shakes.
1607 N Main St

Steak 'n Shake

3.0 ★★★★★ (13) · \$ · Fast Food
Counter-serve chain known for steakhburgers & milkshakes offers a dinerlike space with retro flair.
614 W Raab Rd

Dunkin' Donuts

3.3 ★★★★★ (10) · \$ · Sandwich
Long-running chain serving signature donuts, breakfast sandwiches & a variety of coffee drinks.
1603 N Main St

Gloria Jean's Coffee

4 reviews · Coffee Shop
Specialty coffeeshouse chain offering gourmet blends in a variety of flavors, plus tea & pastries.
1609 Northbrook Dr #1

Smoothie King

4.1 ★★★★★ (6) · \$\$ · Juice Shop
Health-conscious chain featuring blended drinks in varied flavors, nutritional products & snacks.
1608 Northbrook Dr

Additional dining establishments can be found about 1 mile south of Raab Road on Main St. (US51) near the Illinois State University campus. Restaurants include Jimmy John's, Avanti's Italian Restaurant, Pizza Hut, Potbelly's, Chipotle, Meatheads, etc.