



Skyscrapers, Inc. Presents

# AstroAssembly 2012

Friday & Saturday, September 28 & 29 Citizen Science and Astronomy

## Friday Evening Program

Would you like to give an informal talk on Friday night? Contact Kathy Siok (kathys5@cox.net).

## Saturday Program

Beginning at 9:00am at Seagrave Observatory. Astrophotography & AstroBakeOff competitions, H-alpha solar observing, swap tables, vendor, lunch at the Stardust Grille.

**Ed Turco** Skyscrapers, Inc.

*The Amateur Astronomer's Equipment in 1961: Early Citizen Science in Astronomy*

Ed Turco has been a very active member of Skyscrapers since 1961, holding most of the offices of the organization, conducting telescope making classes and giving many talks to this group and others. He has received many prestigious awards at Stellafane for his hand crafted telescopes, in optical and all other categories.

**Gerry Dyck** Skyscrapers, Inc. & AAVSO

*The Variable Star Observations of Frank E. Seagrave*

Gerry Dyck, Skyscrapers member and AAVSO observer since 1978, will present a summary of the contribution which our namesake **Frank E. Seagrave** made to the AAVSO International Database. His talk will also mention the variable star observations of Skyscrapers founder, **Prof. Charles Smiley**.

**Dr. Carie Cardamone** Brown University

*What is Citizen Science?*

Citizen Scientists volunteer their time, helping scientists to advance scientific research by collecting & analyzing data, observing the natural world, solving puzzles, and testing natural phenomena. I will introduce the origin of the **Zooniverse**, one of the internet's most popular Citizen Science projects, and discuss many of the ways in which the public is contributing to scientific research today.

**Dr. Meg Schwamb** Yale Center for Astronomy & Astrophysics

*Searching for Exoplanets with 340,000 Eyes*

**Planet Hunters** (<http://www.planethunters.org>), part of the Zooniverse (<http://www.zooniverse.org>) collection of citizen science projects, enlists the general public to visually identify the signatures of transiting extrasolar planets (exoplanets) via the World Wide Web. When a planet moves in front of its host star, or transits, it blocks

a small portion of the star's light. Although the drop in starlight is small, it is detectable by NASA's Kepler spacecraft. A Jupiter sized planet will block 1% of the star's light for Sun-like stars, and the transit depth is 0.1% for Earth-sized planets around Sun-like stars. Kepler is monitoring ~160,000 stars nearly continuously for transiting exoplanets. The Kepler team has automated routines searching the light curves for transits, which have found an impressive number of exoplanet candidates. Currently over 2000 known planet candidates have been found by the Kepler team.

**Dr. Carie Cardamone** Brown University

*Green Peas: Discoveries of Citizen Scientists*

I will introduce the **Galaxy Zoo Citizen Science** project and discuss some new discoveries being made through collaborations with Citizen Scientists. In particular, I will introduce the "Green Peas", a class of galaxies unknown until volunteers in the Galaxy Zoo project noted their peculiar bright green color and small size. These galaxies provide unique insights to astronomers into how stars (and galaxies) grew in the early universe.

## Saturday Evening Program

Begins at 5:30pm at North Scituate Community Center.

Reception, catered banquet dinner, introductions, raffle prizes.

**Dr. Bethany Cobb Kung** George Washington University

*Extreme Variables: Gamma-ray Bursts, Supernovae and Cataclysmic Variables*

While there are many types of stars that change brightness, only the most extreme of these will experience many magnitudes of variation over short periods of time. Several of these extreme objects are phenomena related to dying or dead stars, including the three to be discussed in this talk: **gamma-ray bursts, supernovae and cataclysmic variables**. Gamma-ray bursts (GRBs) are the most powerful stellar explosions in the universe, each one likely signaling the formation of a new black hole in a distant galaxy. Supernovae mark the death of massive stars via core collapse, a process that in some cases also lead to a GRB. Cataclysmic variables (CVs) are binary star systems in which a dead star (a white dwarf or neutron star) accretes material from its living companion, resulting in outbursts of hydrogen fusion. Understanding these objects depends on observing and analyzing their light curves – their brightness over time. Because these objects experience great changes in brightness, they are ideal objects to engage citizen scientists. In fact, citizen scientists have already made significant contributions to these fields and will continue to do so in the era of "big data." Citizen scientists can easily become engaged in this science via publicly available data and event alerts and through initiatives such as the Zooniverse and the **American Association of Variable Star Observers**.

Send completed form and check (made payable to Skyscrapers Inc.) to:

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Name	x <b>Registrations at \$20.00 each</b> Total \$	
Address	x <b>Banquet tickets at \$20.00 each</b> <small>Banquet tickets must be pre-ordered. No tickets will be sold the day of the event.</small> Total \$	
	<b>Total \$</b>	
Email	<b>I would like to give a short 20-minute talk on Friday evening:</b> <small>Indicate the title of your talk below. Kathy Siok (kathys5@cox.net) will contact you via email to confirm your talk.</small>	