

ASTRAL PROJECTIONS

July 2011
Volume 22 Issue 7

Icehunters: Crowdsourcing the Kuiper Belt

Meeting Schedule

July 8th Meeting: "History of Telescopes" Presented by Bob Salvatore

Date: Friday, 7/8/2011

Time: 7:00 PM - 10:00 PM

Location: Robert J. Novins Planetarium, College Drive, Ocean County College, Toms River, NJ 08754

August 13th Meeting: Annual Picnic

Date: Saturday, 8/13/2011

Time: 3:00 PM - 7:00 PM

Location: TBD



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Back in January 2006, NASA launched the New Horizons spacecraft to skim past Pluto and its moons and, perhaps, other cold worlds in the outer reaches of the solar system. New Horizons will fly by the dwarf planet in July 2015 and cruise through the heart of the Kuiper Belt from 2016 to 2020. Astronomers think the craft will

have enough fuel to change course slightly and visit a few of the icy bodies there — if any happen to lie close enough to its trajectory.

This is where you come in. Imagine what you might feel if NASA decides to maneuver the craft toward a Kuiper Belt object you helped discover!

That is the kind of excitement that the newest “Zooniverse” citizen science project, Icehunters, is hoping to generate.

The program was developed at Southern Illinois University in March by Pamela Gay and Cory Lehan. A beta version launched in May drew thousands of interested citizens and encouraged the team to take the site live on Tuesday.

The website offers up deep, wide-field sky images. The images are shown as subtracted double exposures, a process developed specially for this project, from images taken in 2004 and 2005 using the Subaru Telescope atop Mauna Kea in Hawaii and the Giant Magellan Telescope in Chile. The original images show normal star fields. The images on the website were created by subtracting one normal image from another taken two hours to two days apart. The result is a grey, grainy “difference image,” where the immobile background stars are greatly dampened and moving or changing objects stand out.



A screenshot of the new citizen science project, Icehunters, produced by Southern Illinois University Edwardsville in collaboration with the New Horizons project and Zooniverse.

Ice Hunters 2011 and the New Horizons Mission

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Whats up this month?

July 2011 Celestial Events

1st: New Moon. Jupiter rises at 2:00 am EDT.

2nd: Mercury visible just above the western horizon from about 30 minutes after sunset until about 10:00 pm EDT.

4th: Earth reaches Aphelion, 1.017 AU from the Sun.

6th: Mercury crosses the Beehive Cluster (M44) in Cancer the Crab.

8th: First Quarter Moon and Space Shuttle Atlantis is scheduled for launch (this is the *last* space shuttle launch).

12th: Neptune completes its first orbit of the Sun since its discovery 165 years ago. At magnitude 7.8, it is easy to see with binoculars.

15th: Full Moon.

23rd: Last Quarter Moon

26th: Mars passes between the horns of Taurus the Bull.

30th: New Moon and peak for Delta Aquarid Meteor Shower.

ASTRA Public Outreach & Star Parties Schedule for July

Lighthouse #2 Star Parties

These are private star parties for ASTRA members and Earthwatch/Drexel students only.

Dates: 7/1/2011, 7/15/2011, and 7/29/2011

Time: 6:00 PM - 11:00 PM

Location: The Lighthouse Center, 7th Street & Navajo Dr,
Waretown, NJ 08758

Jakes Branch Summer 1

This is a night under the stars at beautiful Jake's Branch Park. Come one, come all. They even turn the lights out for us!

Date: Saturday, 7/9/2011

Time: 8:00 PM - 11:00 PM

Location: Jakes Branch County Park, Double Trouble Road,
Beachwood, NJ 08722

OCC Summer Star Watch

Members of ASTRA will setup their telescopes on the campus of Ocean County College and share the wonderful views of the planets and stars with the public.

Date: Saturday, 7/30/2011

Time: 8:00 PM - 10:30 PM

Location: Robert J. Novins Planetarium, Ocean County College,
College Drive, Toms River, NJ 08754

Check the online message board on the date of the star party for up to date information on these events.



Astronomical League National Headquarters

9201 Ward Parkway; Suite 100

Kansas City, MO 64114

1-816-333-7759 or www.astroleague.org

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Icehunters

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Astronomical Items for Sale, or Help Wanted Advertisements:

If you have an item to Sell, or need help with an astronomical problem (a question, or Telescope setup) contact the President President@astra-nj.org to announce it at a meeting and send the advertisement to the newsletter (See Newsletter below).

Newsletter: E-mail material (Meeting reports, Observing reports) to Newsletter@astra-nj.org

EXECUTIVE BOARD

President – John Endreson,
President@astra-nj.org;

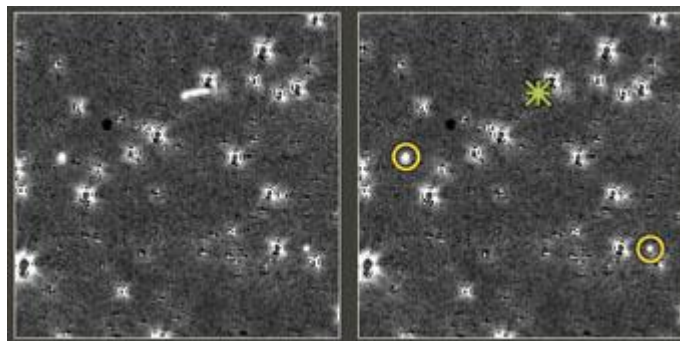
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The difference images used on Icehunters.org, were created by subtracting two telescopic wide field-images from each other. The image to the right shows blobs and streaks marked with a circle and an asterisk respectively. Blobs are Kuiper Belt objects, while streaks are asteroids in the main belt between Mars and Jupiter.

Ice Hunters 2011 and the New Horizons Mission

Registered Ice Hunters scan these images for certain types of blobs and streaks. The streaks represent fast-moving foreground objects — probably small main-belt asteroids between Jupiter and Mars. Blobs are slower worlds of the Kuiper Belt — or perhaps variable stars, or image flaws. Humans can sort them out better than machines. “These people are going to help us catalogue the Kuiper Belt objects,” says Gay, “and become a part of the team that is trying to map the solar system.”

Once Kuiper Belt candidates are found, the many images will be correlated with each other to identify multiple sightings of the same object and determine its orbit. The New Horizons team hopes to use one or more particularly lucky finds to maneuver the spacecraft after it passes Pluto.

Although the Icehunters project will look around the entire Kuiper Belt, New Horizons can’t maneuver much. “Not all the identified objects will be in the right way,” says John Spencer (Southwest Research Institute), a member of the New Horizons science team, “but at least one or two of them will probably be.”

Even in its first days the project has garnered a great deal of public interest. Gay reports that the traffic to the website went through the roof early Wednesday morning, forcing the team to start using an additional server. When the public goes through the current set of uploaded images (each will be sent to several people for blind cross-checking), additional, more recent images will become available. The project will end when the science team runs out of images.

“I think they will have fun,” said Spencer of the public. “They can get involved and make real contributions to science. And they’ll learn a little astronomy along the way too.”

By Shweta Krishnan

(<http://www.skyandtelescope.com/news/home/124490554.html>)

Club Telescopes

ASTRA Library of Books & DVD's

The following books and DVD's are available to borrow for one month at a time. Request for these items must be made prior to our regular meeting and returned the following meeting. Please e-mail your request for these items to John Endreson at President@astra-nj.org

BOOKS

1) **The National Air and Space Museum**
Second Edition by C.D.B. Bryan

2) **Milestones of Aviation** Smithsonian
Institution National Air and Space
Museum

3) **New Atlas of the Moon** by Serge
Brunier (Author), Thierry Legault
(Photographer).

4) **Encyclopedia of space** by National
Geographic

5) **The Real Mars** by Michael Hanion

DVD's

1) **Parts 1&2 Understanding the
Universe What's New in Astronomy**
2003 Taught by: Professor Alex
Filippenko. Each part has 8 lectures, 45
minutes per lecture.

2) **Parts 1 to 5 Understanding the
Universe An Introduction to Astronomy**
Taught by: Professor Alex Filippenko each
part has 8 lectures, 45 minutes per lecture.

3) COSMOS

In his "ship of the imagination," Carl
Sagan guides us to the farthest reaches of
space and takes us back into the history of
scientific inquiry in the course of 13
fascinating hours.

For a complete list of books and DVD's,
visit our website or e-mail John Endreson
at President@astra-nj.org



A.S.T.R.A. owns four small telescopes
6-inch Dobsonian
8-inch Dobsonian
80mm Celestron Refractor
120mm EQ AstroView Refractor.

These telescopes are available for club members to borrow and use
for a month or two at a time.

Wanted!

No longer used telescopes, Telescope parts,
and accessories.

E-mail John Endreson at President@astra-nj.org
We will come and pick-up your used equipment.

ASTRA-WEAR: For Embroidered and/or Printed items With the ASTRA Logo



You can see some samples at ASTRA meetings. To order by mail:
Shelter Cove Embroidery Co. 1333 Bay Ave Toms River, NJ
08753 call 732-506-7700 or E-mail astra-wear@estitches.com