IO – September 2007

Issue 2007-09
Eugene Astronomical Society

Eugene Astronomical Society,
Annual Club Dues $25, Board Members:
President: Sam Pitts - 688-7330
Secretary: Jerry Oltion - 343-4758
Jacob Strandlien, Tommy Lightning Bolt
& Fred Domineack

www.eugeneastro.org

EAS is a Proud Member of:

The Astronomical League
The World's Largest Federation of Amateur Astronomers

IO editor- sampitts@comcast.net 688-7330

Io *(EYE-oh) is nearest to Jupiter and fastest orbiting of the four Galilean moons*

Monday- September 10th MEETING

EUGENE ASTRONOMICAL SOCIETY

Held at:

Science Factory Children's Museum & Planetarium

2300 Leo Harris Parkway, Eugene

SW of Autzen Stadium

A-focal Photography

By: Jerry Oltion

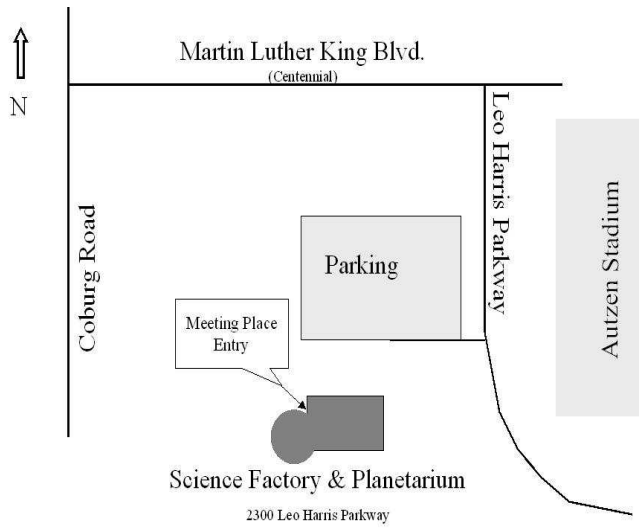
Jerry Oltion will share his knowledge and spectacular images captured with a digital camera using various A-focal techniques. Jerry will show how to capture images through the telescope's eyepiece using modern digital cameras. Jerry will also talk about his trip to Wyoming last July in which he taught a week-long astronomy course to science fiction writers and visited the 90-inch infrared telescope run by the University of Wyoming Rick Kang will give a report on ALCON 2007; Jim Jackson will give an overview of this year's Oregon Star Party. Tom Conlin will share his new scope he made that caused quit a stir at the Oregon Star Party.

Jacob Strandlien will keep you up to date with his monthly presentation on current events and news in Space & Astronomy. Jacob always has some interesting news and great images to share with the group.

We always encourage audience participation during our meetings. EAS meetings are traditionally times when we learn about astronomy and share others' experiences and knowledge of astronomy and the night sky.

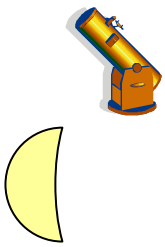
The Eugene Astronomical Society is a group of amateur astronomers dedicated to observing the night sky, learning about the Universe, and sharing that understanding and appreciation of astronomy with students and the general public. EAS has been doing astronomy education and public outreach for many years. The EAS holds club meetings on the first Monday of each month (*except Holidays*) at 7 PM at The Science Factory Children's Museum & Planetarium. Guests are welcome to visit; we ask for a $1 guest contribution. Meetings feature speakers with presentations on topics of interest to club members, current viewing opportunities, telescope help, and star party planning.

EAS thanks the Science Factory Children's Museum & Planetarium for providing the Planetarium for our monthly meetings.



Come and enjoy the wonders of the night sky with the Eugene Astronomical Society at The Science Factory's comfortable Planetarium. The meeting will begin at **7:00 PM** in the Planetarium.

Observing in September




September 3	September 11	September 19	September 26
Mercury Set 8:21 PM	Mercury Set 8:10 PM	Mercury Set 7:58 PM	Mercury Set 7:44 PM
Venus Rise 4:56 AM	Venus Rise 4:19 AM	Venus Rise 3:54 AM	Venus Rise 3:41 AM
Mars Rise 11:48 PM	Mars Rise 11:33 PM	Mars Rise 11:18 PM	Mars Rise 11:04 PM
Jupiter Set 11:31 PM	Jupiter Set 11:02 PM	Jupiter Set 10:34 PM	Jupiter Set 10:10 PM
Saturn Rise 5:40 AM	Saturn Rise 5:14 AM	Saturn Rise 4:48 AM	Saturn Rise 4:25 AM
Uranus Rise 7:53 PM	Uranus Rise 7:21 PM	Uranus Rise 6:49 PM	Uranus Rise 6:21 PM
Neptune Rise 6:48 PM	Neptune Rise 6:16 PM	Neptune Rise 5:44 PM	Neptune Rise 5:16 PM
Pluto Set 1:04 AM	Pluto Set 12:28 AM	Pluto Set 11:57 PM	Pluto Set 11:29 PM

All times: U.S. Pacific Daylight Time (March 11-November 4, 2007) = UT - 7 hours. Pacific Standard Time (Nov.-March) = UT-8

Date	Moonrise	Moonset	Sunrise	Sunset	Twilight Begin	Twilight End
9/1/2007	21:44	12:02	06:35	19:49	04:52	21:32
9/2/2007	22:19	13:24	06:36	19:47	04:53	21:30
9/3/2007	23:04	14:41	06:37	19:45	04:55	21:28
9/4/2007	------	15:51	06:39	19:43	04:56	21:25
9/5/2007	00:01	16:47	06:40	19:42	04:58	21:23
9/6/2007	01:07	17:32	06:41	19:40	04:59	21:21
9/7/2007	02:18	18:06	06:42	19:38	05:01	21:19
9/8/2007	03:32	18:33	06:43	19:36	05:02	21:17
9/9/2007	04:43	18:54	06:44	19:34	05:04	21:14
9/10/2007	05:51	19:13	06:45	19:33	05:05	21:12
9/11/2007	06:57	19:31	06:47	19:31	05:07	21:10
9/12/2007	08:02	19:47	06:48	19:29	05:08	21:08
9/13/2007	09:05	20:05	06:49	19:27	05:10	21:06
9/14/2007	10:09	20:24	06:50	19:25	05:11	21:04
9/15/2007	11:14	20:47	06:51	19:23	05:12	21:02
9/16/2007	12:20	21:15	06:52	19:21	05:14	21:00
9/17/2007	13:25	21:49	06:53	19:20	05:15	20:57
9/18/2007	14:26	22:33	06:55	19:18	05:17	20:55
9/19/2007	15:22	23:28	06:56	19:16	05:18	20:53
9/20/2007	16:09	------	06:57	19:14	05:19	20:51
9/21/2007	16:48	00:31	06:58	19:12	05:21	20:49
9/22/2007	17:20	01:43	06:59	19:10	05:22	20:47
9/23/2007	17:46	02:58	07:00	19:08	05:23	20:45
9/24/2007	18:09	04:16	07:02	19:06	05:25	20:43
9/25/2007	18:31	05:35	07:03	19:05	05:26	20:41
9/26/2007	18:53	06:54	07:04	19:03	05:27	20:39
9/27/2007	19:16	08:15	07:05	19:01	05:29	20:37
9/28/2007	19:44	09:39	07:06	18:59	05:30	20:35
9/29/2007	20:17	11:03	07:08	18:57	05:31	20:33
9/30/2007	21:00	12:25	07:09	18:55	05:32	20:31

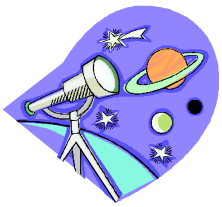
Current Occultations & Other Events

Visit Derek C Breit's web site

"BREIT IDEAS Observatory"

http://www.poyntsource.com/New/Regions/EAS.htm

Go to Regional Events and click on the Eugene, Oregon section. This will take you to a current list of Lunar & asteroid events for the Eugene area. Breit continues to update and add to his site weekly if not daily. This is a site to place in your favorites list and visit often.



With so many clouds, was that August or October?

All times are for Eugene, Oregon Latitude 44º 3' 8" Longitude 123º 5' 8" for listed date

Events

SEPTEMBER 2007

1	Aurigid Meteor Shower Peak
5	30th Anniversary (1977), Voyager 1 Launch
6	JC-Sat 11 Proton M-Briz M Launch; Astrofest 2007, near Kankakee, Illinois
7	Western Nebraska Star Gaze, Scottsbluff, Nebraska; 1st Annual Sierra Summer Star Party, Alpine County Airport, Eastern High Sierra, California; 23rd Annual Idaho Star Party, Bruneau Dunes State Park, Idaho.
8	40th Anniversary (1967), Surveyor 5 Launch (Moon Lander)
9	Asteroid 2006 BZ147 Near-Earth Flyby (0.081 AU); 25th Anniversary (1982), Conestoga I Launch (1st Private Rocket); 115th Anniversary (1892), Edward Barnard's Discovery of Jupiter Moon Amalthea.
10	Moon Occults Saturn; Uranus At Opposition; Cassini, Iapetus Flyby; Asteroid 2002 SV Near-Earth Flyby (0.096 AU)
11	Partial Solar Eclipse, Visible from South America, Antarctica
13	Selene 1/Micro-Labsat 2/R-Star/V-Star H-2A Launch (Japan Lunar Orbiter); Southwest Night Sky Conference, Taos, New Mexico
15	Astronomy Day; Workshop: Imaging with Web Cams and Digital Astrophotography, Tucson, Arizona
18	AIAA SPACE 2007 Conference, Long Beach, California
20	Lecture: Voyager - 30 Years in Space, Pasadena, California; Conference: 50 Years In Space, Pasadena, California
23	Autumnal Equinox, 09:51 UT; Asteroid 2001 RY47 Near-Earth Flyby (0.092 AU)
24	Meeting: Exploration of the Moon - A UK Perspective, Milton Keynes, United Kingdom
26	Dawn Delta 2 Launch (Asteroid Orbiter)
28	45th Anniversary (1962), Alouette Launch (Canada's 1st Satellite)
29	Mercury At Its Greatest Eastern Elongation; Asteroid 2000 TH1 Near-Earth Flyby (0.081 AU)
30	Cassini, Distant Flyby of Dione, Enceladus & Telesto; Asteroid 2002 TA67 Near-Earth Flyby (0.093 AU)

AU=Astronomical Unit (92,955,800 miles)

Star Parties:

- August 25th (Saturday): Cascara State Campgrounds, Dexter, Oregon
- August 28th (Tuesday): College Hill Reservoir 24th & Lawrence, Eugene 1:30 AM Lunar Eclipse
- September 28th (Friday) Mount Pisgah
- October 4th (Thursday) Jefferson Elementary School (NE ofAlbany) contact Rick kang

Thank You Castle Storage

Board member Tommy Lightning Bolt was instrumental in getting a storage unit from the owners of Castle Storage for EAS to store its telescopes and equipment. EAS would like to thank Castle Storage for their generosity and support for our group. Please give them a call if you need a storage space and tell your friends. They are great people and offer secure and quality units.

Join the EAS mail list→http://eugeneastro.org/mailman/listinfo/org.eugeneastro.general

Keep up to date on opportunities to join local amateur astronomer outings to observe the night skies. This is a great opportunity to get advice in setting up your own equipment from seasoned veterans or just to look through different scopes. They always have fun and enjoy helping newcomers.

In Memory of Clyde Brown

EAS has lost another long time friend and member, known also as one of the best "natural" Santas in the county, Clyde Brown. Clyde passed from this world on Tuesday, August 7th, at his home with his wife Candy holding his hand. Clyde enjoyed the stars and night skies and was always ready to help at EAS events when his health allowed him. Clyde and Candy were always together sharing the wonders of the world and night skies. Our thoughts and prayers are with you Candy. Let's all take a moment to reminisce about the times we shared with Clyde. He will be missed.

September Meeting Nominations

The September meeting will be your opportunity to volunteer to be nominated for a seat on the EAS Board. Three positions are up for election. Both terms for Sam Pitts & Jacob Strandlien expire, but both will accept nominations to be elected for another 2-year term. That leaves one position completely open, so step up and join the board.

Elections will be held at the October meeting. Membership dues will also be collected as all memberships expire in October, so bring your checkbook. We will be issuing membership cards that are valid for one year.

Mount Pisgah Star Party September 28th

EAS is holding the annual star party at mount Pisgah on September 28th (Friday). Set-up will be from 6-8 PM, night sky orientation & slide show at 8 PM by Sam Pitts, viewing starting at 8:30 PM. Scope setup is on the upper parking lot (only vehicles with scopes) parking lower level. We can also setup scopes around the pavilion. So far we have 7+ members signed-up. This is a fun star party with a large public turnout so come on out and share in the fun.

You can contact Sam if you have any questions at 688-7330.

Jefferson Elementary School Star Party October 4th

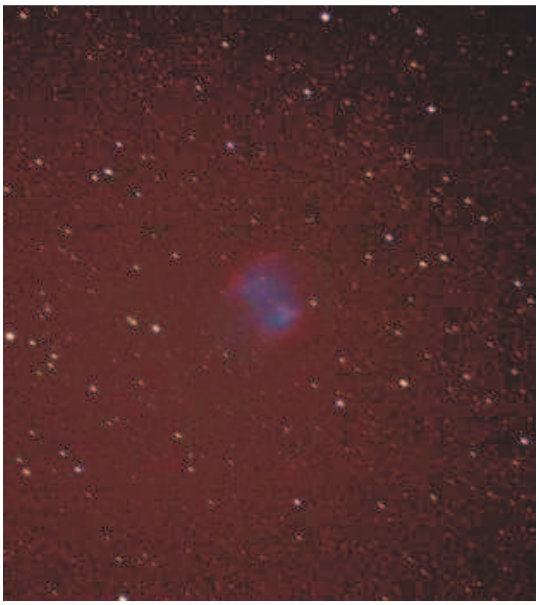
I've been invited to do outreach at Jefferson Elementary School (NE of Albany) in early October, and they'd like to hold a star party Thursday evening, October 4th. The contact teacher is Ms. Jean Stohlman. She's scouting out locations near the Jefferson schools (apparently all three (Elem, Middle, High) are adjacent.) I suggested that perhaps folks from HOTVA, NS45, and EAS might be interested in bringing telescopes, so she extends the invitation, and has offered some funds toward fuel. If you could please circulate the word and have interested sky-guides contact me, I'll serve as the liaison/coordinator. Thanks much, hope everyone had a great time at OSP and that the clear skies are back!

Rick Kang - 683-1381

Nebulas in August

By Garth Price

Lagoon Nebula M8



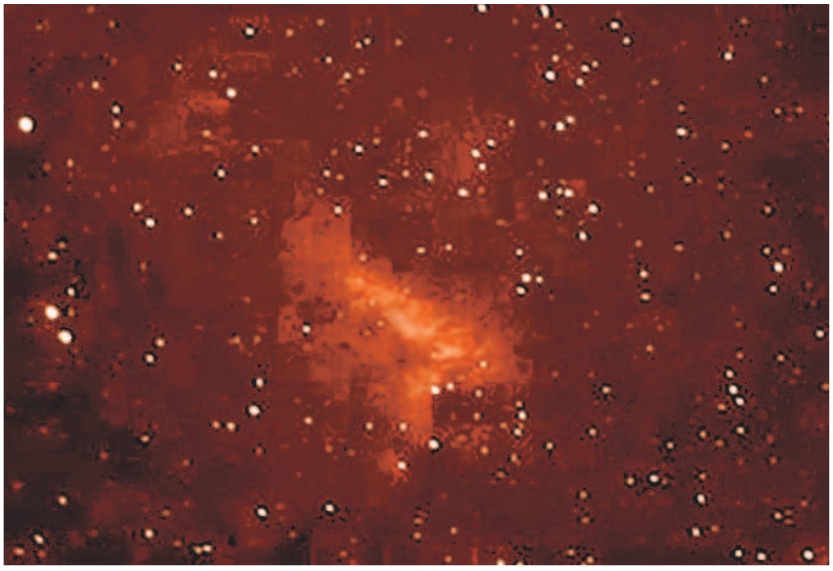
Dumbbell Nebula M27

Garth Price is avidly pursing Astrophotography whenever it is clear, with some great results. He is using an 8" Celestron SCT and digital (DSLR) Canon Rebel to capture these amazing shots from local spots. As recently as Wednesday night, when over 15 EAS members showed up at the Royal Avenue site (thanks Rossco), Price was capturing and recording photons. He took several good star fields and captured the Andromeda Galaxy M31.

The pictures illustrated here were taken at prime focus with the 8" SCT at 1280mm and f/6.3 with the following exposures: Exposure times - M27 55 seconds; M8 60 seconds; M20 33 seconds; M17 57 seconds (white balance-Auto).

Thanks, Garth, for sharing your images. We are looking forward to many more images as you target various starscapes.

Trifid Nebula M20



Swan Nebula M17

Cosmic Cockroaches

By Dr. Tony Phillips

Cockroaches are supposed to be tough, able to survive anything from a good stomping to a nuclear blast. But roaches are wimps compared to a little molecule that has recently caught the eye of biologists and astronomers—the polycyclic aromatic hydrocarbon.

Using the IR spectrometer on the Spitzer Space Telescope, scientists found organic molecules in supernova remnant N132D.

Polycyclic aromatic hydrocarbons (PAHs for short) are ring-shaped molecules made of carbon and hydrogen. "They're all around us," says Achim Tappe of the Harvard Center for Astrophysics. "PAHs are present in mineral oils, coal, tar, tobacco smoke and automobile exhaust." Aromatic, ring-shaped molecules structurally akin to PAHs are found in DNA itself!

That's why Tappe's recent discovery may be so important. "PAHs are so tough, they can survive a supernova."

The story begins a few thousand years ago when a massive star in the Large Magellanic Cloud exploded, blasting nearby star systems and interstellar clouds with hot gas and deadly radiation. The expanding shell, still visible from Earth after all these years and catalogued by astronomers as "N132D," spans 80 light years and has swept up some 600 Suns worth of mass.

Last year "we observed N132D using NASA's Spitzer Space Telescope," says Tappe. Spitzer is an infrared (IR) telescope, and it has a spectrometer onboard sensitive to the IR emissions of PAHs. One look at N132D revealed "PAHs all around the supernova's expanding shell. They appear to be swept up by a shock wave of 8 million degree gas. This is causing some damage to the molecules, but many of the PAHs are surviving."

Astronomers have long known that PAHs are abundant not only on Earth but throughout the cosmos—they've been found in comet dust, meteorites and many cold interstellar clouds—but who knew they were so tough? "This is our first evidence that PAHs can withstand a supernova blast," he says.

Their ability to survive may be key to life on Earth. Many astronomers are convinced that a supernova exploded in our corner of the galaxy 4-to-5 billion years ago just as the solar system was coalescing from primitive interstellar gas. In one scenario of life's origins, PAHs survived and made their way to our planet. It turns out that stacks of PAHs can form in water—think, primordial seas—and provide a scaffold for nucleic acids with architectural properties akin to RNA and DNA. PAHs may be just tough enough for genesis.

Cockroaches eat your hearts out.

Find out about other Spitzer discoveries at www.spitzer.caltech.edu.

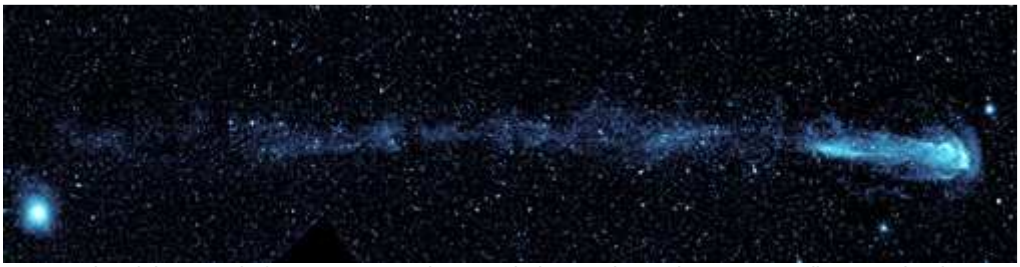
This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Author: Dr. Tony Phillips; Production Editor: Dr. Tony Phillips | Credit: Science@NASA

Speeding-Bullet Star Leaves Enormous Streak across Sky

NASA-Article from JPL

NASA's Galaxy Evolution Explorer has spotted an amazingly long comet-like tail behind a star streaking through space at supersonic speeds. The star, named Mira after the Latin word for "wonderful," has been a favorite of astronomers for about 400 years. It is a fast-moving, older star called a red giant that sheds massive amounts of surface material.



A new ultraviolet mosaic from NASA's Galaxy Evolution Explorer shows a speeding star that is leaving an enormous trail of "seeds" for new solar systems. The star, named Mira (pronounced my-rah) after the latin word for "wonderful," is shedding material that will be recycled into new stars, planets and possibly even life as it hurls through our galaxy.

The space-based Galaxy Evolution Explorer scanned the popular star during its ongoing survey of the entire sky in ultraviolet light. Astronomers then noticed what looked like a comet with a gargantuan tail. In fact, material blowing off Mira is forming a wake 13 light-years long, or about 20,000 times the average distance of Pluto from the sun. Nothing like this has ever been seen before around a star.

"I was shocked when I first saw this completely unexpected, humongous tail trailing behind a well-known star," said Christopher Martin of the California Institute of Technology in Pasadena, Calif. "It was amazing how Mira's tail echoed on vast, interstellar scales the familiar phenomena of a jet's contrail or a speedboat's turbulent wake." Martin is the principal investigator for the Galaxy Evolution Explorer, and lead author of a Nature paper appearing today about the discovery. To view the outlandish star, visit http://www.nasa.gov/mission_pages/galex/20070815/a.html

Astronomers say Mira's tail offers a unique opportunity to study how stars like our sun die and ultimately seed new solar systems. As Mira hurtles along, its tail sheds carbon, oxygen and other important elements needed for new stars, planets and possibly even life to form. This tail material, visible now for the first time, has been released over the past 30,000 years.

"This is an utterly new phenomenon to us, and we are still in the process of understanding the physics involved," said co-author Mark Seibert of the Observatories of the Carnegie Institution of Washington in Pasadena. "We hope to be able to read Mira's tail like a ticker tape to learn about the star's life."

Billions of years ago, Mira was similar to our sun. Over time, it began to swell into what's called a variable red giant - a pulsating, puffed-up star that periodically grows bright enough to see with the naked eye. Mira will eventually eject all of its remaining gas into space, forming a colorful shell called a planetary nebula. The nebula will fade with time, leaving only the burnt-out core of the original star, which will then be called a white dwarf.

Compared to other red giants, Mira is traveling unusually fast, possibly due to gravitational boosts from other passing stars over time. It now plows along at 130 kilometers per second, or 291,000 miles per hour. Racing along with Mira is a small, distant companion thought to be a white dwarf. The pair, also known as Mira A (the red giant) and Mira B, orbit slowly around each other as they travel together in the constellation Cetus 350 light-years from Earth.

In addition to Mira's tail, the Galaxy Evolution Explorer also discovered a bow shock, a type of buildup of hot gas, in front of the star, and two sinuous streams of material coming out of the star's front and back. Astronomers think hot gas in the bow shock is heating up the gas blowing off the star, causing it to fluoresce with ultraviolet light. This glowing material then swirls around behind the star, creating a turbulent, tail-like wake. The process is similar to a speeding boat leaving a choppy wake, or a steam train producing a trail of smoke.

The fact that Mira's tail only glows with ultraviolet light might explain why other telescopes have missed it. The Galaxy Evolution Explorer is very sensitive to ultraviolet light and also has an extremely wide field of view, allowing it to scan the sky for unusual ultraviolet activity.

"It's amazing to discover such a startlingly large and important feature of an object that has been known and studied for over 400 years," said James D. Neill of Caltech. "This is exactly the kind of surprise that comes from a survey mission like the Galaxy Evolution Explorer."

Caltech leads the Galaxy Evolution Explorer mission and is responsible for science operations and data analysis. NASA's Jet Propulsion Laboratory, also in Pasadena, manages the mission and built the science instrument. Caltech manages JPL for NASA. The mission was developed under NASA's Explorers Program managed by NASA's Goddard Space Flight Center, Greenbelt, Md. Researchers sponsored by Yonsei University in South Korea and the Centre National d'Etudes Spatiales (CNES) in France collaborated on this mission.

Graphics and additional information about the Galaxy Evolution Explorer are online at http://www.nasa.gov/galex and http://www.galex.caltech.edu .

New Magazine for Astronomy

Astronomy Technology Today, the definitive "astro equipment rag", is excited to announce that we have extended our introductory $12 annual subscription rate through the end of August. Subscribe now for only $1 per monthly issue and you will receive more than $500 in valuable discounts from our advertisers towards some very popular astronomy products. You get 12 months of industry news items, product reports and insightful articles, plus discounts on the stuff you want

CONTACT:
For more information about Astronomy Technology Today please email:
info@astronomytechnologytoday.com

http://www.astronomytechnologytoday.com/index.asp

Thanks, Tom, for the information.

Tom explains his creation

Tom Conlin's New Telescope at OSP 2007

Go Deep at OSP 2007

Dawn at OSP 2007- Orion is in background - All Photos Courtesy Scott K. http://spaceace.shutterfly.com/