

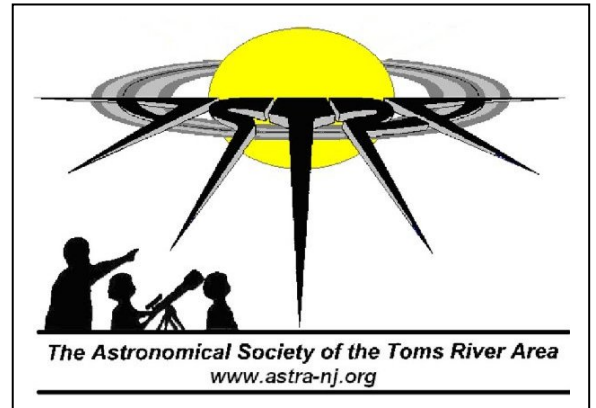
ASTRAL PROJECTIONS

SEPTEMBER 2006

ASTRA-WEAR: For Embroidered and Printed clothing

With ASTRA's Logo see our website.

<http://www.astra-nj.org/ASTRA-WEAR.pdf>



Meeting Schedule for 2006

- Jan. 2006** Workshop to help the public use their telescopes.
Early meeting start 7:00 PM
- Feb. 2006** Eyepieces - Rich Brady
- Mar. 2006** Camp Evans in Wall Township - Fred Carl
Information Age Organization (www.infoage.org)
- Apr. 2006** Going over plans for Astronomy Day, and possible effect on ASTRA of Planetarium closing – all members.
- May 2006** Astronomy Equipment and/or Books, Show & Tell.
- June 2006** Solar Eclipse - Phil Zollner.
- July 2006** Famous Astronomers II - Bob Salvatore
- Sep. 2006** Telescopes in Movies - Bob Salvatore
- Oct. 2006** Talk about being a participant in the Kitt Peak "Advanced Observer's Program" - Steve Walters (from STAR)
- Nov. 2006** Asterisms – Rich Brady
- Dec. 2006** Election results, Awards, and video "Solar Blast" – Randy Walton.

ASTRA Star Parties

Friday September 29th "Fall Starwatch" at OCC

Other Star Parties and Events

SJAC Fall Party Weekend September 22nd-24th you may want to tell your folks that we are changing to a no-frills for the Fall Star Party and the cost will be lowered to our spring rates.

Eight is enough: Pluto gets the boot



Philip Zollner, at the Novins Planetarium, insists that Pluto's "recategorization" as a dwarf planet isn't a demotion.

"This is simply a recategorization," Zollner said. "It's a problem of nomenclature, of what to call things. Sure, there is some disappointment among some who thought that Pluto had some kind of sentimental 'squatter's rights' to be called a planet."

This new configuration of the solar system puts Pluto into the category of icy "dwarf planets" alongside the other categories of small rocky planets such as Earth and Mars and gas giants such as Jupiter and Saturn, he said.

"If you moved Pluto to where Earth is, Pluto would grow a tail," he said. "Planets don't grow tails. But comets do."

There are things out there beyond Pluto, says Zollner, things that may require more rejiggering of the names of things in those dim, dark places.

A.S.T.R.A. Perseid Picnic



The annual Perseid Picnic was held on Saturday, August 12 at the home of Rich & Peggi Gamba. The weather cooperated to perfection.



There was a great turnout, not a single cloud, no mosquitoes, way too much food, lots of astronomy talk, and about 10-15 meteor sightings.



Highlights included crabbing, paddle boating, pontoon boat rides, and solar observing. Those that stayed late enough, enjoyed watching the meteor shower.





Adam's birthday falls on August 12th and he agreed to share his day providing that everyone bring him a gift (*told you he was smart*). He enjoyed opening his birthday gifts, and has since played with every single one.



Adam fooled Mike Kozic with his water gun camera - twice! Once when he squirted Mike while taking his "picture" and the next time when he turned the squirter around and let Mike take his "picture."



"Hannah was in charge of crabbing, and managed to catch 10 or so crabs with her other recruits.



A special thanks to our friend Chris Degnan at the Berkeley Clam Bar on the Seaside Park boardwalk. He provided the delicious seafood. Also, a big thanks you to all the committee members who each provided a dish (or two).

Adam Gamba sends a big thank you to all, for all the thoughtful birthday gifts. And thanks to Jerry Sorrentino, our next-door neighbor, for the use of his dock, and yard.

2006 September Celestial Events: supplied by J. Randolph Walton (Randy)

Day	Date	Time (LMT)	Event
Sat	2	04:37	Saturn Rises
		05:15	Venus Rises
		06:29	Sunrise
		16:17	Moon Rise
		19:30	Sunset
		20:12	Mars Sets
		22:10	Jupiter Sets
Thu	7	14:42	Full Moon
		19:28	Moon Rise
Thu	14	07:15	Last Quarter Moon
		14:54	Moon Set
Sat	16	03:50	Saturn Rises
		05:40	Venus Rises
		06:42	Sunrise
		16:33	Moon Set
		19:07	Sunset
		19:35	Mars Sets
		19:37	Mercury Sets
		21:20	Jupiter Sets
Wed	20	06:00	Zodiacal Light in E before morning twilight for two weeks
Fri	22	06:51	Moon Rise
		07:45	New Moon, Annular Solar Eclipse not visible in US
Sat	23	00:03	Fall Equinox
		03:30	Saturn Rises
		06:03	Venus Rises
		06:48	Sunrise
		18:56	Sunset
		19:19	Moon Set
		19:20	Mars Sets
		19:35	Mercury Sets
		20:55	Jupiter Sets
Sat	30	03:05	Saturn Rises
		06:17	Venus Rises
		06:55	Sunrise
		07:04	First Quarter Moon
		18:44	Sunset
		19:03	Mars Sets
		19:25	Mercury Sets
		20:35	Jupiter Sets

Items for Sale

CANON 50mm f/1.8 camera lens. Contact: Wally Hager III or J. Randolph Walton - Phone # 732-458-3465. Both can be reached at the next ASTRA meeting.

FOR SALE: Stellarvue 4" f/6.9 achromatic refractor OTA, Model # 102D. Focal length 704mm. The objective is partially attenuated meaning visible color is very minimal. I've seen traces of color only on the Moon and brightest planets and stars. Contrast is unusually high. Includes a nesting dewcap and a fully rotating JMI Crayford type tailpiece. Also comes with a 2" mirror diagonal, 1¼" adaptor, Stellarvue tube rings, and a soft padded Stellarvue carry case. Combined original cost over \$1175. Sell for \$850.

1) Tele-Vue 1¼" mirror diagonal w/compression ring (original design) Like-new condition
Original cost: \$90 now \$40

Call 732-905-0889 (Phil Zollner or pazap@juno.com) I'll bring this stuff to the July meeting for you to look at.

Group Purchase: If you want to handle a "Group Purchase" for something: contact J. Randolph Walton (Randy) phone # 732-458-3465 to announce it at a meeting or E-mail to Newsletter@astra-nj.org or oldjedi2001@msn.com to place it in the newsletter.

Astronomy Help Wanted: If you have an "Astronomy Help Wanted" advertisement for the newsletter: E-mail to Newsletter@astra-nj.org or oldjedi2001@msn.com or mail to: ASTRA Newsletter Editor c/o Robert J. Novins Planetarium Ocean County Collage P.O. Box 2001 Toms River, NJ 08754-2001

Newsletter Deadline: Material for *ASTRAL Projections* must be received 21 days before the next meeting. E-mail to Newsletter@astra-nj.org or oldjedi2001@msn.com or mail to: ASTRA Newsletter Editor c/o Robert J. Novins Planetarium Ocean County College P.O. Box 2001 Toms River, New Jersey 08754-2001

Astronomy Courses: Planetarium staff offers a number of mini-courses on astronomy. Call the OCC Department of Continuing and Professional Education, 732/255-0404, for information or to register.

Planetarium office: 732/255-0343 weekdays 9 AM - 4 PM. Hot line: 732/255-0342. Touch 5 for ASTRA. Visit the Planetarium page at <http://ocean.edu/planet.htm> or visit our Web page at <http://astra-nj.org>

Executive Board: President -J. Randolph Walton - Phone # 732-458-3465 **Vice President-Secretary** – Rich Gamba **Treasurer** - Ro Spedaliere **Webmaster** - Paul Gitto **Newsletter Editor** - John Endreson

Deadly Planets

By Patrick L. Barry and Dr. Tony Phillips

About 900 light years from here, there's a rocky planet not much bigger than Earth. It goes around its star once every hundred days, a trifle fast, but not too different from a standard Earth-year. At least two and possibly three other planets circle the same star, forming a complete solar system.

Interested? Don't be. Going there would be the last thing you ever do.

The star is a pulsar, PSR 1257+12, the seething-hot core of a supernova that exploded millions of years ago. Its planets are bathed not in gentle, life-giving sunshine but instead a blistering torrent of X-rays and high-energy particles.

"It would be like trying to live next to Chernobyl," says Charles Beichman, a scientist at JPL and director of the Michelson Science Center at Caltech.

Our own sun emits small amounts of pulsar-like X-rays and high-energy particles, but the amount of such radiation coming from a pulsar is "orders of magnitude more," he says. Even for a planet orbiting as far out as the Earth, this radiation could blow away the planet's atmosphere, and even vaporize sand right off the planet's surface.

Astronomer Alex Wolszczan discovered planets around PSR 1257+12 in the 1990s using Puerto Rico's giant Arecibo radio telescope. At first, no one believed worlds could form around pulsars—it was too bizarre. Supernovas were supposed to destroy planets, not create them. Where did these worlds come from?

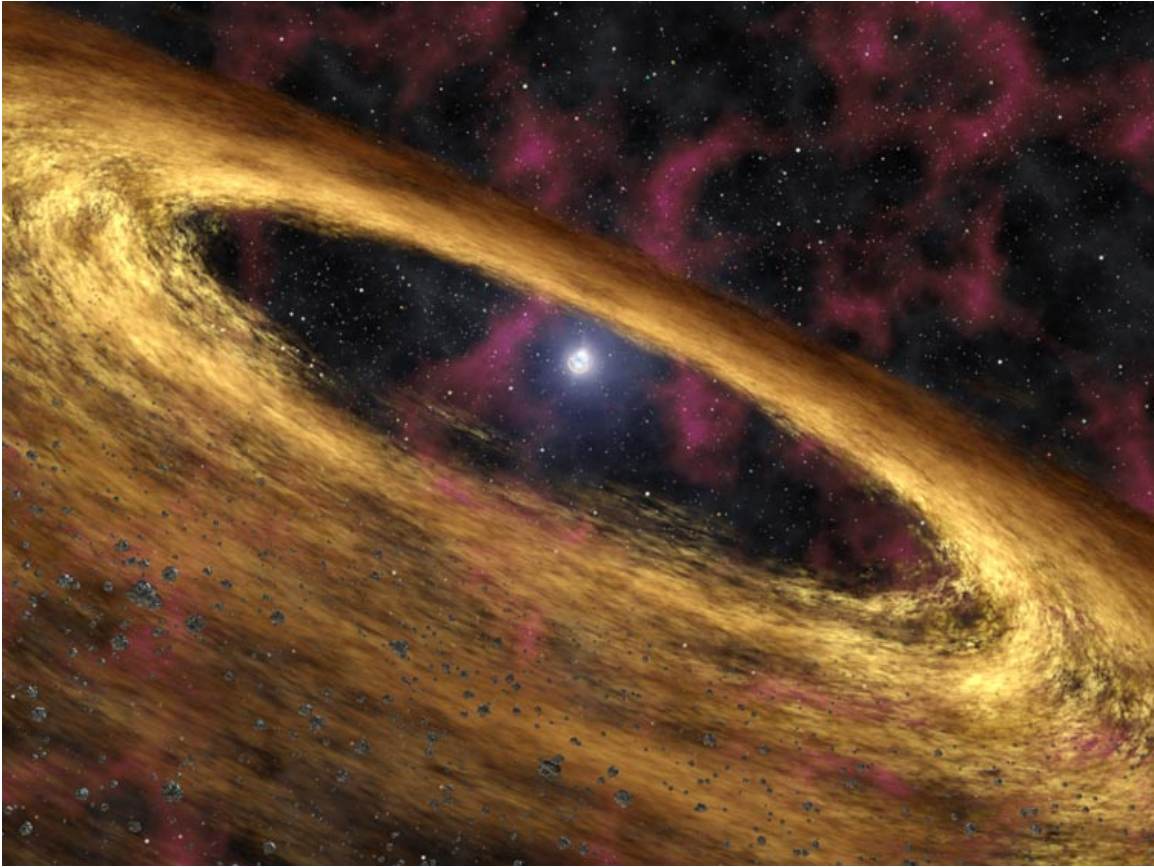
NASA's Spitzer Space Telescope may have found the solution. Last year, a group of astronomers led by Depto Chakrabarty of MIT pointed the infrared telescope toward pulsar 4U 0142+61. Data revealed a disk of gas and dust surrounding the central star, probably wreckage from the supernova. It was just the sort of disk that could coalesce to form planets!

As deadly as pulsar planets are, they might also be hauntingly beautiful. The vaporized matter rising from the planets' surfaces could be ionized by the incoming radiation, creating colorful auroras across the sky. And though the pulsar would only appear as a tiny dot in the sky (the pulsar itself is only 20-40 km across), it would be enshrouded in a hazy glow of light emitted by radiation particles as they curve in the pulsar's strong magnetic field.

Wasted beauty? Maybe. Beichman points out the positive: "It's an awful place to try and form planets, but if you can do it there, you can do it anywhere."

More news and images from Spitzer can be found at <http://www.spitzer.caltech.edu/>. In addition, The Space Place Web site features a cartoon talk show episode starring Michelle Thaller, a scientist on Spitzer. Go to <http://spaceplace.nasa.gov/en/kids/live/> for a great place to introduce kids to infrared and the joys of astronomy.

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



Caption:

Artist's concept of a pulsar and surrounding disk of rubble called a "fallback" disk, out of which new planets could form.

Note to editors:

This image may be downloaded from: http://spaceplace.nasa.gov/news_images/pulsar_system_art.jpg.

Moon Storms

An old Apollo experiment is telling researchers something new and surprising about the moon.

December 7, 2005: Every lunar morning, when the sun first peeks over the dusty soil of the moon after two weeks of frigid lunar night, a strange storm stirs the surface.

The next time you see the moon, trace your finger along the terminator, the dividing line between lunar night and day. That's where the storm is. It's a long and skinny dust

storm, stretching all the way from the north pole to the south pole, swirling across the surface, following the terminator as sunrise ceaselessly sweeps around the moon.

Never heard of it? Few have. But scientists are increasingly confident that the storm is real.

The evidence comes from an old Apollo experiment called LEAM, short for Lunar Ejecta and Meteorites. "Apollo 17 astronauts installed LEAM on the moon in 1972," explains Timothy Stubbs of the Solar System Exploration Division at NASA's Goddard Space Flight Center. "It was designed to look for dust kicked up by small meteoroids hitting the moon's surface."

Billions of years ago, meteoroids hit the moon almost constantly, pulverizing rocks and coating the moon's surface with their dusty debris. Indeed, this is the reason why the moon is so dusty. Today these impacts happen less often, but they still happen.

Apollo-era scientists wanted to know, how much dust is ejected by daily impacts? And what are the properties of that dust? LEAM was to answer these questions using three sensors that could record the speed, energy, and direction of tiny particles: one each pointing up, east, and west.

LEAM's three-decade-old data are so intriguing, they're now being reexamined by several independent groups of NASA and university scientists. Gary Olhoeft, professor of geophysics at the Colorado School of Mines in Golden, is one of them:

"To everyone's surprise," says Olhoeft, "LEAM saw a large number of particles every morning, mostly coming from the east or west--rather than above or below--and mostly slower than speeds expected for lunar ejecta."

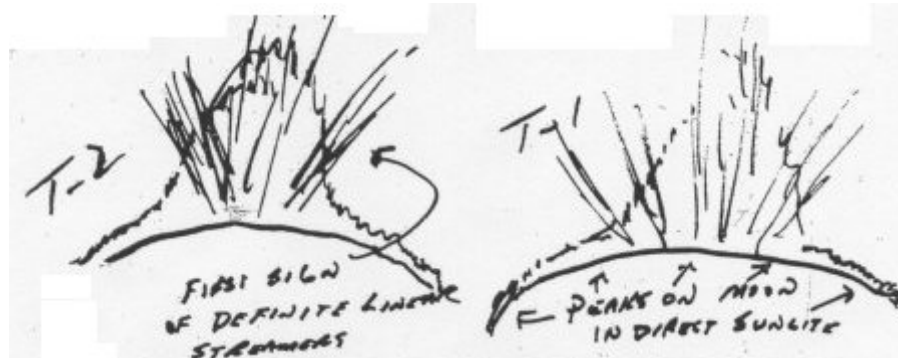
What could cause this? Stubbs has an idea: "The dayside of the moon is positively charged; the nightside is negatively charged." At the interface between night and day, he explains, "electrostatically charged dust would be pushed across the terminator sideways," by horizontal electric fields.

Even more surprising, Olhoeft continues, a few hours after every lunar sunrise, the experiment's temperature rocketed so high--near that of boiling water--that "LEAM had to be turned off because it was overheating."

Those strange observations could mean that "electrically-charged moondust was sticking to LEAM, darkening its surface so the experiment package absorbed rather than reflected sunlight," speculates Olhoeft.

But nobody knows for sure. LEAM operated for a very short time: only 620 hours of data were gathered during the icy lunar night and a mere 150 hours of data from the blazing lunar day before its sensors were turned off and the Apollo program ended.

Astronauts may have seen the storms, too. While orbiting the Moon, the crews of Apollo 8, 10, 12, and 17 sketched "bands" or "twilight rays" where sunlight was apparently filtering through dust above the moon's surface. This happened before each lunar sunrise and just after each lunar sunset. NASA's Surveyor spacecraft also photographed twilight "horizon glows," much like what the astronauts saw.



Above: Dusty "twilight rays" sketched by Apollo 17 astronauts in 1972.

It's even possible that these storms have been spotted from Earth: For centuries, there have been reports of strange glowing lights on the moon, known as "lunar transient phenomena" or LTPs. Some LTPs have been observed as momentary flashes--now generally accepted to be visible evidence of meteoroids impacting the lunar surface. But others have appeared as amorphous reddish or whitish glows or even as dusky hazy regions that change shape or disappear over seconds or minutes. Early explanations, never satisfactory, ranged from volcanic gases to observers' overactive imaginations (including visiting extraterrestrials).

Now a new scientific explanation is gaining traction. "It may be that LTPs are caused by sunlight reflecting off rising plumes of electrostatically lofted lunar dust," Olhoef suggests.

All this matters to NASA because, by 2018 or so, astronauts are returning to the Moon. Unlike Apollo astronauts, who never experienced lunar sunrise, the next explorers are going to establish a permanent outpost. They'll be there in the morning when the storm sweeps by.

The wall of dust, if it exists, might be diaphanous, invisible, harmless. Or it could be a real problem, clogging spacesuits, coating surfaces and causing hardware to overheat.

Which will it be? Says Stubbs, "we've still got a lot to learn about the Moon."



Above: The box in the foreground is the Lunar Ejecta and Meteorites Experiment (LEAM).