

February 2008

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S*T*A*R
P.O. Box 863
Red Bank, NJ 07701
On the web at:
<http://www.starastronomy.org>

Edited by: Ahmad & Hanna Jrad



February's Meeting

The next meeting of S*T*A*R will be on Thursday, February 7. Our program will be *"Moons of the Solar System"* by David Britz. All are welcome. The meeting will begin promptly at 8:00pm at the King of Kings Lutheran Church, 250 Harmony Road, Middletown. For further details and directions to our meetings. Please contact Rich Gaynor at richg870@aol.com or 732-671-3756.

Editor's Corner

Thanks to Gavin Warnes, Steve Walters, Michael Lindner, Rob Nunn, Steve Fedor, & Randy Walton for contributing to this month's Spectrogram. Reminder to pay membership dues \$25/individual, \$35/family. Donations are appreciated. Make payments to Paul Nadolny at the February meeting or mail a check payable to S*T*A*R Astronomy Society Inc to:
S*T*A*R Astronomy Society
P.O. Box 863
Red Bank, NJ 07701

February Issue

Please send articles and contributions by Friday, February 22. Please email to stargaze07@verizon.net.



Photographer: [STEPHEN HAMILTON](http://www.starastronomy.org)

Calendar

Sep 6, 2007 – *"NASA's Deep Impact Mission"* by Elizabeth Warner, University of Maryland

Oct 4, 2007 – *"Webcam Astrophotography"* by Clif Ashcraft

Nov 1, 2007 – *"The Interstellar Medium"* by Dr Hector Arce, American Museum of Natural History

Dec 6, 2007 – *"Adventures at Palomar"* by Alan Midkiff

Jan 3, 2008 – *"NASA's Dawn Mission"* by Dennis O'Leary, S*T*A*R

Feb 7, 2008 - *"Moons of the Solar System"* by David Britz, S*T*A*R

Mar 6, 2008 - *"Remote Control CCD Imaging"* by Steve Walters, S*T*A*R

Apr 5, 2008 – *"Our Changing Sun"* by Ken Legal, S*T*A*R

May 4, 2008 – *"The Near Side Lunar Megabasin"* by Charlie Byrne, S*T*A*R

Jun 1, 2008 – AGM

Announcements:

2/11 - Telescope Night will be held on Monday Feb 11 7-9 PM at the Village Elementary School between Newman Springs Rd & McCampbell Rd at Middletown Rd. Expect approx. 300+ people in students & families, Grade 3+.

2/13 - Astronomy Night at Mill Lake School. 115 Monmouth Rd. Monroe, NJ. 6:30-8:30 PM.

4/26-27 - NEAF 2008 Northeast Astronomy Forum & Telescope Show.

<http://www.rocklandastronomy.com/neaf.htm>

President's Corner

By Gavin Warnes

2008 has been a good year for amateur astronomers so far. No snow in January, some clear nights with two comets to look for and the close approach of an asteroid. Mars is looking dimmer, but in February Saturn will be at opposition. If you are new to this hobby seeing Saturn for the first time through a telescope is astonishing. There is also a lunar eclipse on the evening of February 20th so there are plenty of reasons to turn off the TV and go outside!

There's been a lot of chat on the discussion board lately about video astronomy and how it compares with using a CCD camera. Both are great techniques and have their own pros and cons. To give members a chance to see what a CCD camera can do, Steve Walters has arranged a demo for us. Technology and weather permitting at the March meeting we will be able to remotely control Steve's telescope over the Internet and take some pictures. This should be a real treat. Over the years Steve has steadily upgraded his equipment so we'll be using a 16" Ritchey Chretien scope and top of the range CCD camera mounted on an Astro Physics 1200 mount.

February also brings another opportunity to promote the club. Larry Campbell is holding his annual star party at the Village Elementary School in Holmdel on Monday February 11th. The first batch of kids and parents show up at 7pm. This is always a very popular event and Larry will need a lot of help so please come along if you can.

Enjoy some crisp February skies, and start doing some homework on galaxies as spring is just round the corner.

Gavin

January Meeting Minutes

By Steve Fedor

The January 2008 meeting of S*T*A*R Astronomy began at 8:09 pm on 1/3/2008. The meeting was attended by approximately 37 members and 1 non-member. President Gavin Warnes chaired the meeting and began by greeting and introducing the first time attendee.

Gavin announced that the meeting would be videotaped and made available over the internet at the club's web site.

The evening's lecture "Seeing on the Edge of Our Solar System" was presented by S*T*A*R V.P. Dennis O'Leary. Dennis gave a fascinating summary of numerous NASA missions of the past along with planned missions for the

future. He also gave a detailed description of ion propulsion engines.

Nancy McGuire then presented "Object of the Month." This month's beginner object was Open Cluster NGC2244 in Monoceros. The challenge object was Hubble's variable nebula (NGC-2261) also in Monoceros

Coffee break began at 9:15. The meeting resumed at 9:35.

Gavin then presented his pictures of Mars taken with his DMK camera. He also discussed the filters he used to achieve the fine images.

Larry Campbell announced his annual Village School in Holmdel star party, which will occur on Feb 11 between 7:00 and 9:00 pm. Volunteers would be greatly appreciated.

Dan Pontone discussed his recent sightings of Comet Tuttle. The Quarantrids meteor shower was also discussed. The meeting was then adjourned.

The 50/50 drawing was held. Russ Drum was the winner.

No Mars Rock Unturned

By Patrick L. Barry

Imagine someday taking a driving tour of the surface of Mars. You trail-blaze across a dusty valley floor, looking in amazement at the rocky, orange-brown hillsides and mountains all around. With each passing meter, you spy bizarre-looking rocks that no human has ever seen, and may never see again. Are they meteorites or bits of Martian crust? They beg to be photographed.

But on this tour, you can't whip out your camera and take on-the-spot close-ups of an especially interesting-looking rock. You have to wait for orders from headquarters back on Earth, and those orders won't arrive until tomorrow. By then, you probably will have passed the rock by. How frustrating!

That's essentially the predicament of the Spirit and Opportunity rovers, which are currently in their fourth year of exploring Mars. Mission scientists must wait overnight for the day's data to download from the rovers, and the rovers can't take high-res pictures of interesting rocks without explicit instructions to do so.

However, artificial intelligence software developed at JPL could soon turn the rovers into more-autonomous shutterbugs.

This software, called Autonomous Exploration for Gathering Increased Science (AEGIS), would search for interesting or unusual rocks using the rovers' low-resolution, black-and-white navigational cameras. Then, without waiting for

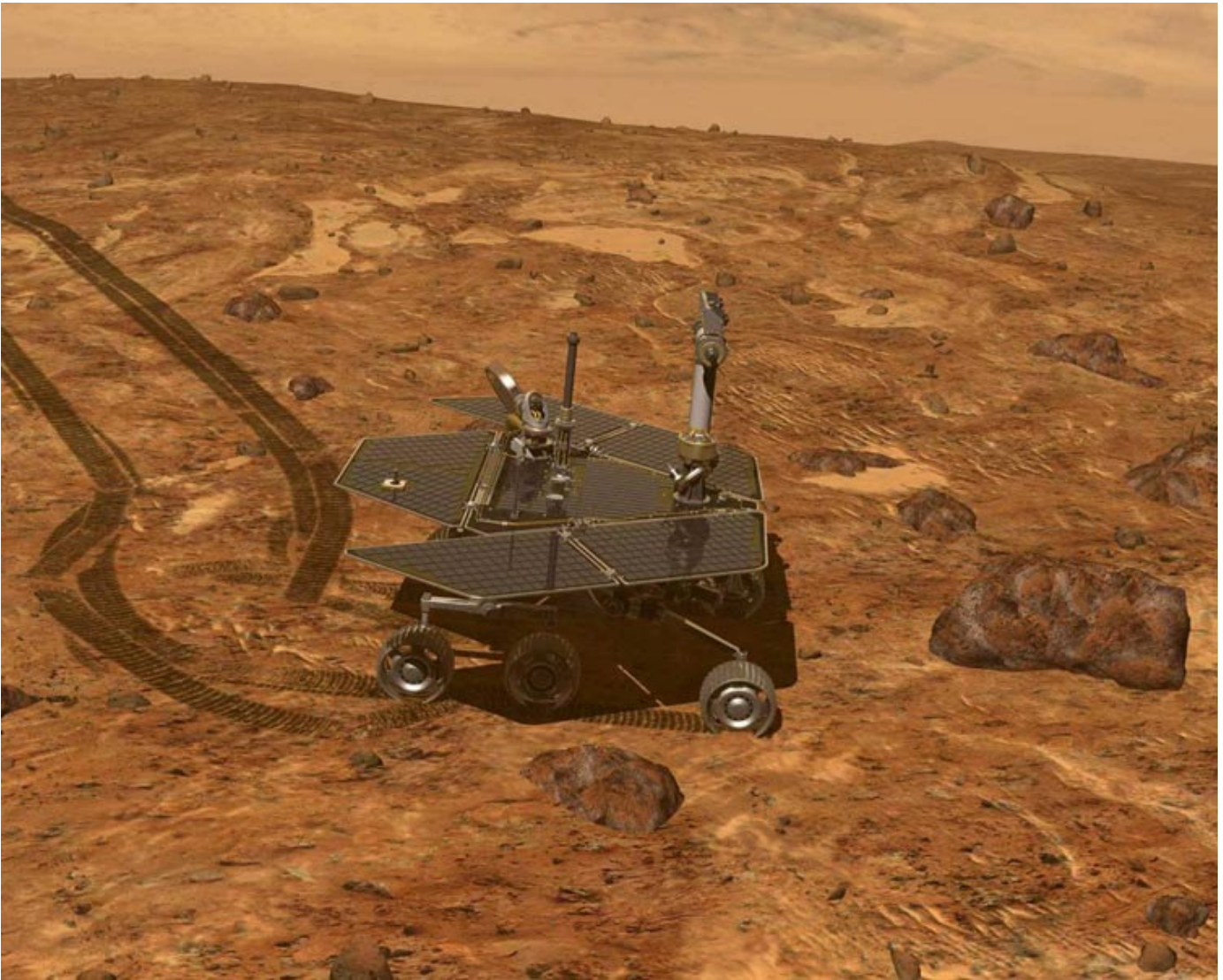


Figure 1. Are these rocks of any scientific interest? With the new AEGIS software, the Mars Rovers, Spirit and Opportunity, will be able to judge for themselves whether a scene is worth a high-resolution image. (Artist's rendering.)

instructions from Earth, AEGIS could direct the rovers' high-resolution cameras, spectrometers, and thermal imagers to gather data about the rocks of interest.

"Using AEGIS, the rovers could get science data that they would otherwise miss," says Rebecca Castaño, leader of the AEGIS project at JPL. The software builds on artificial intelligence technologies pioneered by NASA's Earth Observing-1 satellite (EO-1), one of a series of technology-testbed satellites developed by NASA's New Millennium Program.

AEGIS identifies a rock as being interesting in one of two ways. Mission scientists can program AEGIS to look for rocks with certain traits, such as smoothness or roughness, bright or dark surfaces, or shapes that are rounded or flat.

In addition, AEGIS can single out rocks simply because they look unusual, which often means the rocks could tell

scientists something new about Mars's present and past.

The software has been thoroughly tested, Castaño says, and now it must be integrated and tested with other flight software, then uploaded to the rovers on Mars. Once installed, she hopes, Spirit and Opportunity will leave no good Mars rock unturned.

Check out other ways that the Mars Rovers have been upgraded with artificial intelligence software at <http://nmp.nasa.gov/TECHNOLOGY/infusion.html#sciencecraft>.

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



Movie: Analemma Over New Jersey - Credit & Copyright: [Tom Matheson \(Guidescope.net\)](#)

[An analemma](#) is that figure-8 curve that you get when you [mark the position](#) of the Sun at the same time each day throughout [planet Earth's](#) year. [Above, 26 separate exposures](#) were recorded to illustrate the regular solar motion -- a difficult [project](#) performed mostly during the calendar year 2006. The images were taken at 8 am in the morning in northern [New Jersey, USA](#), and digitally combined with a single foreground image later. The individual images have since been combined into [a movie](#). [Solstices](#) correspond to the top and bottom of the figure-8, indicating the northern and southernmost excursions of the Sun in the sky. The [tilt of planet Earth's axis](#) and the variation in speed as it moves around its orbit combine to produce the graceful [analemma curve](#).

Are you a S*T*A*R Member?

S*T*A*R is the proud owner of a **monstrous 25" Dobsonian Obsession reflector** – which members can gain access to!

Meetings are the first Thursday of each month, except July and August, at 8:00 PM at the King of Kings Lutheran Church, 250 Harmony Rd. in Middletown. Meetings generally consist of lectures and discussion by members or guest speakers on a variety of interesting astronomical topics. S*T*A*R is a member of United Astronomy Clubs of New Jersey (UACNJ), the Astronomical League (AL), and the International Dark Sky Association (IDA).

Memberships: () Individual....\$25 () Family...\$35

Name _____

Address _____

City _____ State _____ Zip _____

Phone _____

Email _____

Make checks payable to: S*T*A*R Astronomy Society, Inc. and mail to P.O. Box 863, Red Bank, NJ 07701



2008 February Celestial Events

Supplied by J. Randolph Walton (Randy)

Day	Date	Time (EST)	Event
Sat	2	04:01	Moon Rise
		04:30	Mars Sets
		05:15	Jupiter Rises
		05:17	Venus Rises
		07:08	Sunrise
		17:20	Sunset
		18:05	Mercury Sets
		19:05	Saturn Rises
Wed	6	17:02	Moon Set
		22:44	New Moon
			Annular Solar Eclipse visible in parts of Antarctica
Sat	9	04:05	Mars Sets
		04:55	Jupiter Rises
		05:25	Venus Rises
		06:30	Mercury Rises
		07:01	Sunrise
		17:28	Sunset
		18:40	Saturn Rises
		20:31	Moon Set
Wed	13	10:03	Moon Rise
		22:33	First Quarter Moon
Sat	16	03:40	Mars Sets
		04:35	Jupiter Rises
		05:30	Venus Rises
		05:45	Mercury Rises
		06:52	Sunrise
		12:38	Moon Rise
		17:36	Sunset
		18:10	Saturn Rises
Wed	20	17:24	Moon Rise
		20:43	Partial Lunar Eclipse begins
		22:01	Total Lunar Eclipse begins
		22:30	Full Moon
		22:51	Total Lunar Eclipse ends
Thu	21	00:08	Partial Lunar Eclipse ends
Sat	23	03:20	Mars Sets
		04:10	Jupiter Rises
		05:30	Venus Rises
		05:30	Mercury Rises
		06:43	Sunrise
		17:45	Sunset
		17:45	Saturn Rises
		19:15	Zodiacal Light visible in W after twilight next two weeks
		20:40	Moon Rise
Thu	28	21:18	Last Quarter Moon

In the Eyepiece

Here is a list of objects for this month. This is reproduced from www.skyhound.com with the kind permission of its creator and author of SkyTools Greg Crinklaw.

Object(s)	Class	Con	RA	Dec	Mag
M35 & NGC 2158	Open Cluster	Gemini	06h08m51.9s	+24°20'28"	5.6
M 38	Open Cluster	Auriga	05h28m39.4s	+35°50'24"	6.8
Sigma Ori	Multiple Star	Orion	05h38m44.8s	-02°36'00"	3.8
M37	Open Cluster	Auriga	05h52m22.3s	+32°32'40"	6.2
The Trapezium	Multiple Star	Orion	05h35m16.5s	-05°23'23"	5.1
NGC 2017/HR 1944	Multiple Star	Lepus	05h39m16.2s	-17°50'58"	6.4
Beta Mon	Multiple Star	Monoceros	06h28m49.1s	-07°01'59"	3.8
NGC 2112	Open Cluster	Orion	05h53m52.2s	+00°23'32"	9.1
IC 418	Planetary Nebula	Lepus	05h27m28.2s	-12°41'50"	10.7
NGC 1931	Open Cluster	Auriga	05h31m24.8s	+34°15'12"	10.1
IC 2149	Planetary Nebula	Auriga	05h56m23.9s	+46°06'17"	11.2
NGC 1893 & IC 410	Open Cluster in Nebula	Auriga	05h22m41.1s	+33°23'49"	7.8
M 50	Open Cluster	Monoceros	07h03m12.3s	-08°19'28"	7.2
Crab	Diffuse Nebula	Taurus	05h34m30.0s	+22°01'00"	8.4
NGC 2022	Planetary Nebula	Orion	05h42m06.2s	+09°05'10"	12.4
Hubble's Variable Nebula	Diffuse Nebula	Monoceros	06h39m12.0s	+08°44'00"	--
H 3-75	Planetary Nebula	Orion	05h40m44.8s	+12°21'16"	13.9
IC 421	Galaxy	Orion	05h32m14.8s	-07°55'01"	12.3
NGC 1999	Diffuse Nebula	Orion	05h36m24.0s	-06°43'00"	--
Focus on The Horsehead	Diffuse/Dark Nebula	Orion	05h41m00.0s	-02°27'00"	--
Abell 12	Planetary Nebula	Orion	06h02m21.4s	+09°39'07"	13.9
IC 443	Diffuse Nebula	Gemini	06h17m48.0s	+22°49'00"	12.0
Focus on the Cone Nebula	Open Cluster	Monoceros	06h41m03.2s	+09°53'07"	4.1
NGC 2242	Planetary Nebula	Auriga	06h34m07.4s	+44°46'37"	15.2

Moon Phases



AstroPuzzle Solution for January 2008

1	B	A	D		4	O	C	C	U	R		9	H	U	T			
12	A	P	E	D	13		14	R	H	O	N	E	15	B	O	S	H	
16	L	I	V	E		17	B	O	S	O	N		18	E	P	E	E	
19	M	A	I	N	D	20	I	S	H		21	D	E	R	I	D	E	
					23	U	T	E			24	S	K	Y				
	25	A	E	O	N		28	N	A	G		31	E	L	L	E		
34	F	L	A	R	E	S		36	G	A	B		38	L	O	N	E	
40	E	D	G	E		41	A	N	I	L	E		43	N	A	D	A	
44	E	E	L		45	W	B	N		46	E	M	O	T	E	R		
	48	R	E	P	S		51	A	G	O		53	A	D	H	D		
			54	L	S	D		56	B	O	Y							
58	A	R	G	U	E	R		61	A	R	E	R	62	O	L	I	T	E
66	C	H	A	T		67	U	M	B	R	A		69	I	B	I	D	
70	A	E	R	O		71	G	A	B	O	N		72	P	I	K	E	
73	D	A	Y			74	S	L	A	N	G		75	S	I	N		

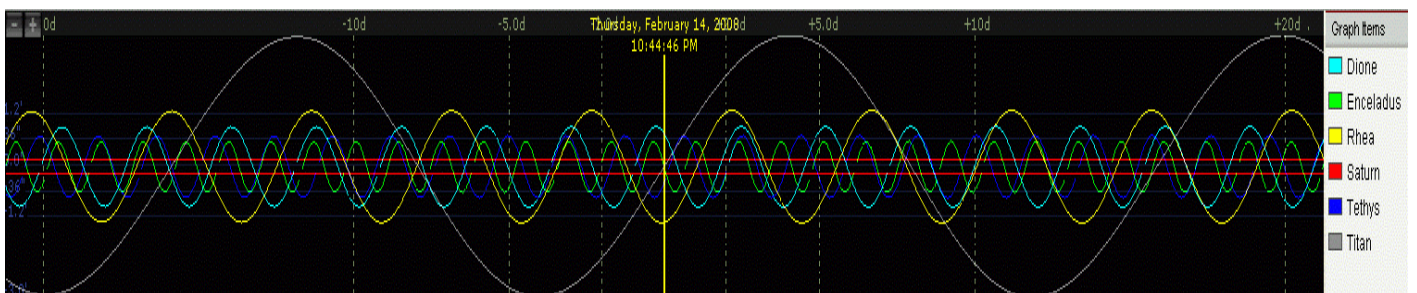
Jupiter Moon Calendar

Here is a graphical depiction of the visible moons of Jupiter for the month of February 2008.

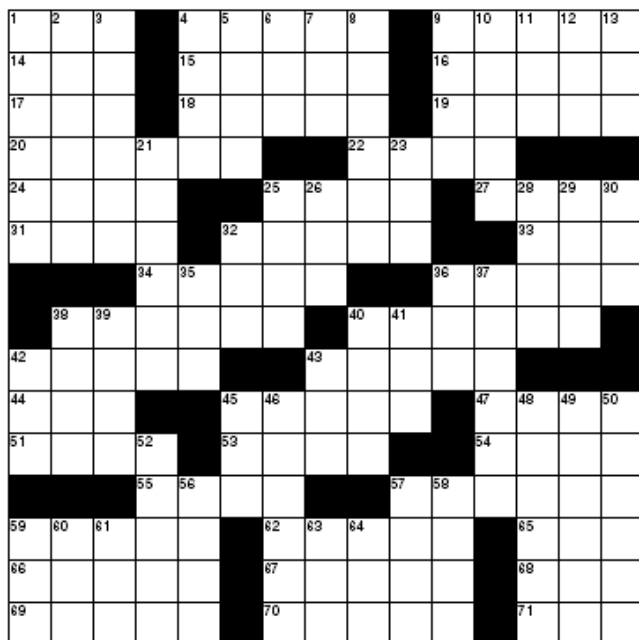


Saturn Moon Calendar

Here is a graphical depiction of the visible moons of Saturn for the month of February 2008.



AstroPuzzle - February 2008



www.CrosswordWeaver.com

ACROSS

- 1 Drunkard
- 4 "wreak ___"
- 9 Tempo
- 14 Dog
- 15 Protein part, with 'acid'
- 16 Sign of the zodiac
- 17 Shoshonean
- 18 What a cherry is to a sundae
- 19 Treed (2 wds.)
- 20 *Beautiful eruptions in the outer part of the Sun's atmosphere.*
- 22 Profanity
- 24 Festival
- 25 Make smooth
- 27 365 days
- 31 Eye infection
- 32 Book of maps
- 33 British thermal unit
- 34 Unclear
- 36 African nation
- 38 *Moon of Uranus named after a Shakespeare character.*
- 40 Truth

42 *The solid surface layer of a planet.*

- 43 Honest
- 44 Standard or average
- 45 *A small, frozen mass of dust and gas revolving around the sun.*
- 47 Type of tea
- 51 Dog food brand
- 53 Suggest
- 54 Ranch guy
- 55 *The second largest moon of Saturn.*
- 57 Relating to life
- 59 Excuse
- 62 Layered
- 65 Compass point
- 66 Cafes
- 67 Faithful
- 68 Boy
- 69 What heated cheese does
- 70 Gross
- 71 Explosive

DOWN

- 1 Scratches one's shoes
- 2 Plug need

- 3 Pact
- 4 Abhor
- 5 Famous cookies
- 6 Influential person
- 7 Less than two
- 8 *The outermost part of the Sun's atmosphere.*
- 9 Stave
- 10 Spongy
- 11 Recede
- 12 Time period
- 13 *Amount of time it takes the Earth to spin once on its axis.*
- 21 Actor Christopher
- 23 Spots
- 25 Dazzle
- 26 Brew
- 28 Tides
- 29 *The smallest particle of any element.*
- 30 Course
- 32 Gone by
- 35 Artist's creation
- 36 Bullet shooter
- 37 Japanese self-defense
- 38 Voiced
- 39 Eruct
- 40 Ash
- 41 Lab animal
- 42 Certified public accountant
- 43 Madagascar franc (abbr.)
- 45 Prompt
- 46 Spoken
- 48 Most adorable
- 49 Light bulb inventor
- 50 Nice
- 52 *The path one object takes around another.*
- 56 Boo
- 57 Snout
- 58 Lazily
- 59 High naval rank (abbr.)
- 60 Downwind
- 61 Peaked
- 63 Promissory note
- 64 New York City