The Monthly Newsletter of the Magic Valley Astronomical Society

March Highlights

4th - Bi-Monthly Astronomy Talk - The Search for "The Search for Extraterrestrial Intelligence" 19:15 in the Rick Allen room at the Herrett Center. Observing follows in the Centennial Observatory and there is an admission charge.

12th- General Membership meeting and Star Party Guest Speaker is Tom Stroman his Bio is to the right.

26th - "Earth Hour" Night Telescope Viewing begins at 20:40 to 21:40 For one hour on this night, people all over the world are asked to turn off all unnecessary lights as a gesture of energy conservation. Why not come to the observatory and enjoy the dark skies?

Introducing our Guest Speaker—Tom Stroman

Originally from Minnesota, Tom Stroman attended Iowa State University, where he earned his B.S. in physics in 2005 and his Ph.D. in astrophysics in 2010. His graduate research in theoretical high energy astrophysics dealt primarily with the development of conditions favorable for the production of cosmic rays in supernova remnants. He is currently a postdoctoral research associate in the University of Utah Department of Physics and Astronomy's cosmic-ray research group, part of the Telescope Array project, an international collaboration that operates the northern hemisphere's largest ultra-high-energy cosmic-ray detector in the desert west of Delta, Utah. He met his wife Wendy when she was a fellow astrophysics graduate student at Iowa State, and their son Josiah was born at the beginning of 2010. Tom is a member of the Salt Lake Choral Artists, and finds Utah's prolonged golf season to be more than adequate compensation for the frequent severe weather he had to leave behind in the Midwest.

Tom's astronomy talk will be "Populating the scenic stellar morgue: how stars die, and the century-old puzzle they may solve."

Join the Magic Valley Astronomical Society in welcoming Tom as our guest speaker on Saturday, the 12th of March at 7:00 p.m. at the Herrett Center.

MVAS Memberships

Welcome to the Magic Valley Astronomical Society

Welcome to the society and hello. We hope you have a good time, enjoy the hobby, & bring good skies with you.

We hold indoor meetings each month at the Herrett Center for Arts & Science College of Southern Idaho campus in Twin Falls, ID, USA . Our meetings start at 7:00 pm on the second Saturday of the month. There will always be a very interesting program, class or presentation at these meetings, as well as good fellowship. There is always something new to learn.

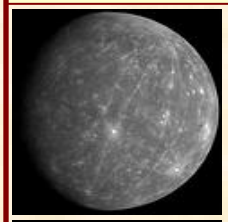
Following our meetings we have a star party (weather permitting) at the Centennial Observatory, also at the Herrett Center.

Our star parties are free and you don't have to bring your own telescope. Telescopes are also set up outside on the stargazer's deck. Star Parties are held year round, so please dress accordingly as the Observatory is not heated, nor air conditioned.

Wishing you dark skies and clear nights!

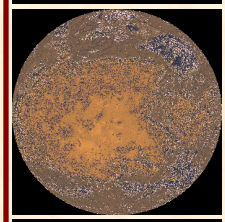
MVAS Board

March Celestial Sky Events



Mercury - Is in the western evening sky during the last half of the month. Passes 2° N of Jupiter on the 16th. The tilt of the ecliptic plus the planets own northern heliocentric latitude in late March favors observers.

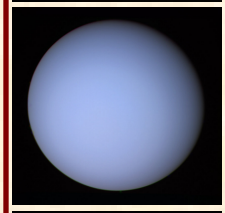
Venus - Brilliant in the eastern morning sky. Lies just 1.6° S of the Moon on the 1st and will be 6° S of the Moon on the 31st.



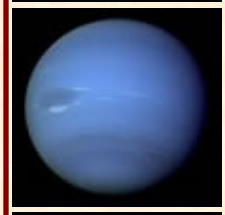
Mars - Still in conjunction with the Sun.

Jupiter - Vanishes into the evening twilight during March. Reaches Perihelion on the 17th the first time since 1999.

Saturn - Rises in the early evening. Retrograding into Virgo.



Uranus - Will not be visible this month



Neptune - Reappears in the morning sky this month near the Aquarius-Capricornus border.

Moon Phases

4 New Moon
6 Moon at apogee (farthest from Earth)
12 Moon First Quarter .
12 Moon Greatest N. Declination + 23.8°
19 Full Moon (Worm Moon - Algonquian First Nation / Fullest of 2011)
19 Moon at perigee (closest to Earth)
25 Moon Greatest S. Declination – 23.7°
26 Moon Last Quarter

Other Sky Events

1 **Moon near Venus** (41° from Sun)

7 **Moon near Jupiter** (23° from Sun) at 0h UT. Mag. -2.1.

11 **Moon near the Pleiades** at 4h UT

12 **Moon near Aldebaran** at 1h UT.

15 **Moon near Pollux** at 6h UT.

16 **Moon near Beehive cluster** M44 at 6h UT.

17 **Moon near Regulus** at 22h UT.

20 **Moon near Saturn** at 21h UT.

21 **Moon near Spica** at 9h UT. 23 . Mag. -0.1.

24 **Moon near Antares** at 14h UT.

27 **Venus .15° S. of Neptune** (36° from Sun) at 1h UT.

28 **Moon near asteroid Vesta** (70° from Sun) at 4h UT.

31 **Moon near Venus** (35° from Sun) at 7h UT.

Vernal equinox on the 20th at 23:21 UT. The time when the Sun reaches the point along the ecliptic where it crosses into the northern celestial hemisphere marking the start of spring in the Northern Hemisphere and autumn in the Southern Hemisphere.

Daylight Saving Time Sunday, March 13, 2011 at 2:00 local time (morning). Don't for get to set your clock forward on this date.

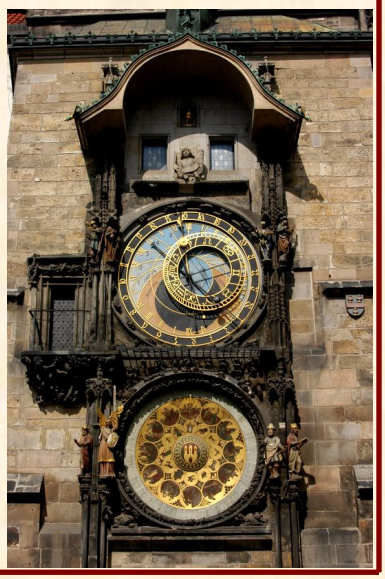
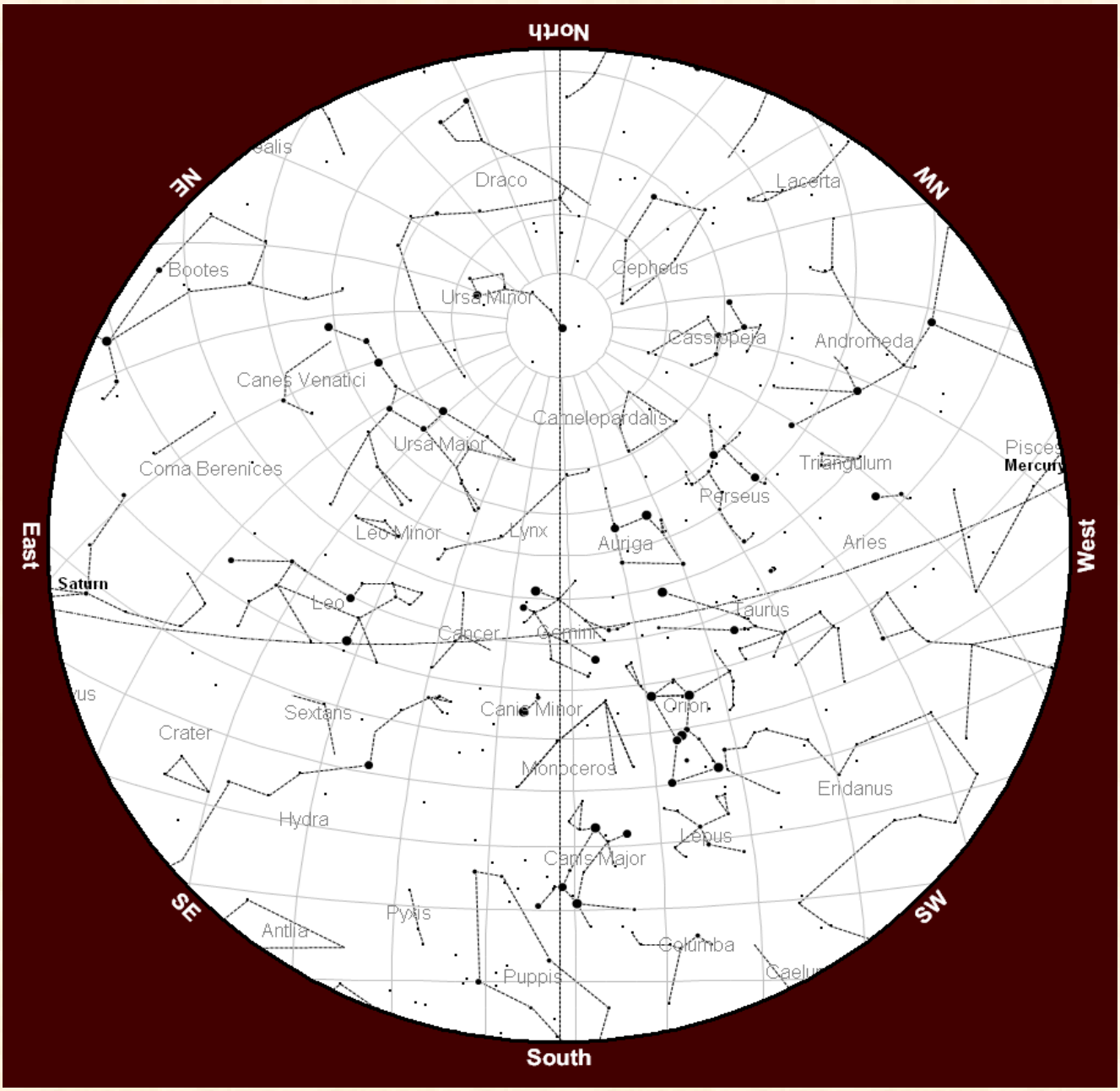


Image: The Astronomical Clock on Old Town Hall in Prague, CZ - Built in 1410 and still working to this day, the Clock continually provides the full range of astronomical data. The dial, or astrolabe, shows three mutually independent movements: The mean revolutions of the Sun, the mean revolutions of the Moon and the apparent revolutions of the stars (the ecliptic, to be more precise). Credit: J. Kohout on Wikipedia

Planisphere for March



Did You Know?

Robert H. Goddard launched the first liquid-fueled (gasoline and liquid oxygen) rocket on March 16, 1926, in Auburn, Massachusetts. Present at the launch were Goddard's crew chief Henry Sachs, Esther Goddard, and Percy Roope, who was Clark's assistant professor in the physics department.

The rocket, which was dubbed "Nell", rose just 41 feet during a 2.5-second flight that ended 184 feet away in a cabbage field on the farm of his Aunt Effie, but it was an important demonstration that liquid propellants were possible. The launch site is now a National Historic Landmark, the Goddard Rocket Launching Site.

This event ushered the rocket age that led to man on the Moon in 1969 our greatest accomplishment.

Image: Dr. Robert Goddard, bundled against the cold New England weather of March 1926 holds the launch frame of his most notable Invention the first Liquid fueled rocket. Credit: NASA / GSFC

Looking Through the Eyepiece - Auriga, the Charioteer

Auriga is a constellation in the northern sky. Its name is Latin for 'charioteer' and its stars form a shape that has been associated with the pointed helmet of a charioteer. It was one of the 48 constellations listed by the 2nd century astronomer Ptolemy, and is included among the 88 modern constellations. Its brightest star is Capella.

According to one Greek myth, Auriga represents Hephaestus, the blacksmith god, who was lame and invented the chariot so as to easily travel wherever he wanted. In another Greek myth, Auriga is said to represent Myrtilus, the charioteer of King Oenomaus, and who sabotaged the king's chariot.

More conventionally, Auriga is also identified as the mythological Greek hero Erichthonius of Athens, the chthonic son of Hephaestus that was raised by the goddess Athena. According to the anonymous writer of the composition Catasterisimi Erichthonius was generally credited to be the inventor of the quadriga, the four-horse chariot, which he used in the battle against the usurper Amphictyon, the event that made Erichthonius the king of Athens. Erichthonius then dedicated himself to Athena and soon after, Zeus raised the Athenian hero into the night sky in honor of his ingenuity and heroic deeds. Capella is associated with the mythological she-goat Amalthea. It forms an asterism with the stars ζ Aurigae and η Aurigae, which are known as the Haedi (the Kids).

Notable Features of Auriga

Capella (α Aurigae, α Aur, Alpha Aurigae, Alpha Aur) is the brightest star in the constellation Auriga, the sixth brightest star in the night sky and the third brightest star in the northern celestial hemisphere, after Arcturus and Vega. Although it appears to be a single star to the naked eye, it is actually a star system of four stars in two binary pairs. The first pair consists of two bright, large type-G giant stars, both with a radius around 10 times the Sun's, in close orbit around each other. These two stars are thought to be cooling and expanding on their way to becoming red giants. The second pair, around 10,000 astronomical units from the first, consists of two faint, small and relatively cool red dwarfs. The Capella system is relatively close, at only 42.2 light-years (12.9 pc) from Earth.

Observational Data for Capella

Component	Aa	Ab
Right ascension	$05^h\ 16^m\ 41.359$	
Declination	+45° 59′ 52.768″	
Component	H	L
Right ascension	$05^h\ 17^m$	$05^h\ 17^m\ 23.728^s$
Declination	+45° 50′	+45° 50′ 22.97″
Apparent magnitude (V)	10.16	13.7

Image of Auriga: This photo is provided by amateur astronomer Jeff DeTray. You can see more at his web site, AstronomyBoy.com. Pg. 5 Image of the Flame Nebula © 11/11/09, HeWhoLooks Creative Commons Lic.

Looking Through the Eyepiece - Auriga, the Charioteer

Epsilon Aurigae (ε Aur, ε Aurigae) is a star in the constellation Auriga. It is traditionally known as Almaaz, Haldus, or Al Anz. Epsilon Aurigae is an unusual eclipsing binary system comprising an F*o* supergiant and a companion which is generally accepted to be a huge dark disk orbiting an unknown object, possibly a binary system of two small B-type stars. Although the star is easily visible to the naked eye, Johann Fritsch's 1821 observations suggest he was the first to notice that the system was a variable. Eventually, from 1842 to 1848, German mathematician Eduard Heis and Prussian astronomer Friedrich Wilhelm Argelander began observing it once every few years. Both Heis' and Argelander's data revealed that the star had become significantly dimmer by 1847.

Observational Data for Epsilon Aurigae

Right ascension $05^h\ 01^m\ 58.1^s$
Declination +43° 49′ 24″

The galactic anticenter is located about 3.5° to the east of β Aurigae. This marks the point on the celestial sphere opposite the location of the galactic core. Hence this region marks a less extensive and less luminous part of the dust band that forms the spiral arms of the Milky Way.
Auriga has many open clusters and other objects because the Milky Way runs through it. The three brightest open clusters are M36, M37 and M38, all of which are visible in binoculars or a small telescope in suburban skies. A larger telescope resolves individual stars. The clusters are about 4100, 4400, and 4200 light years respectively.

Messier 36 Open Cluster M36 (also known as M36, or NGC 1960) is an open cluster in the Auriga constellation. It was discovered by Giovanni Batista Hodierna before 1654. M36 is at a distance about 4,100 light years away from Earth and about 14 light years across. There are at least sixty members in the cluster. The cluster is very similar to the Pleiades cluster if it were the same distance from Earth it would be of similar magnitude.

Observational Data for Messier 36

Right ascension $5^h\ 36^m\ 12^s$
Declination +34° 08′ 4″

Messier 37 (also known as *M37* or *NGC 2099*) is the richest open cluster in the constellation Auriga. It was discovered by Hodierna before 1654. Messier 37 is the brightest of the three open clusters in Auriga. M37 was missed by Le Gentil when he rediscovered M36 and M38 in 1749. Charles Messier independently rediscovered M37 in September of 1764 but all three clusters were recorded by Hodierna before 1654. M37 is roughly 300 million years old and contains over 500 stars with roughly 150 stars brighter than magnitude 12.5. M37 also contains at least a dozen red giants with the hottest main sequence star of spectral type B9V. Its distance is between 3,600 ly. to 4,700 ly.

Observational Data for Messier 37

Right ascension $5^h\ 52^m\ 19^s$
Declination +32° 33′ 2″

Messier 38 (also known as M38 or NGC 1912) is an open cluster in the Auriga constellation. It was discovered by Giovanni Batista Hodierna before 1654 and independently found by Le Gentil in 1749. M36 and M37, also discovered by Hodierna, are grouped together with M38 at a distance of about 3,420 light years away from Earth. The cluster's brightest stars form a pattern resembling the Greek letter Pi or, according to Webb, an "oblique cross."

Observational Data for Messier 38

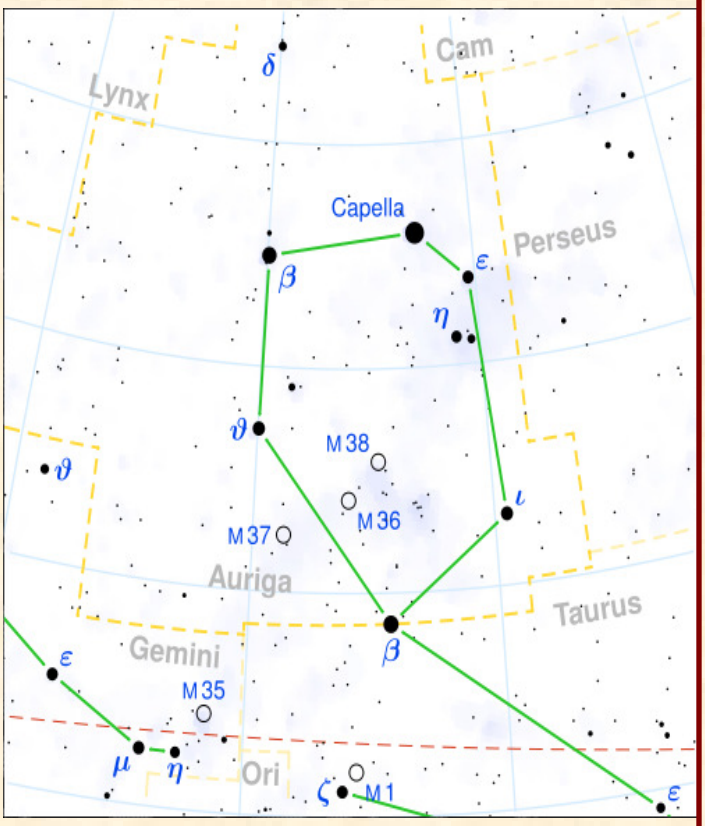
Right ascension $5^h\ 28^m\ 42^s$
Declination +35° 51′ 18″

IC 405 (also known as the **Flaming Star Nebula**, SH 2-229, or Caldwell 31) is an emission/reflection nebula in the constellation Auriga, surrounding the bluish star AE Aurigae. It shines at magnitude +6.0. Its celestial coordinates are RA $05^h\ 16.2^m$ dec +34° 28′. It surrounds the irregular variable star AE Aurigae and is located near the emission nebula IC 410, the open cluster M38, and the naked-eye K-class star Hassaleh. The nebula measures approximately 37.0' x 19.0', and lies about 1,500 light-years away. It is believed that the proper motion of the central star can be traced back to the Orion's Belt area.

Observational Data for IC 405
Right ascension $05^h\ 16^m\ 05^s$
Declination +34° 27′ 49″

Images of M36, M37, M38

Image above is of M36 an open cluster in Auriga, the Charioteer . Image upper right is M37 Image below left is M38 and Credit NOAO/NSF/AURA Map image is courtesy WikiMedia



NASA Releases Images of Man-Made Crater on Comet

PASADENA, Calif. -- NASA's Stardust spacecraft returned new images of a comet showing a scar resulting from the 2005 Deep Impact mission. The images also showed the comet has a fragile and weak nucleus.

The spacecraft made its closest approach to comet Tempel 1 on Monday, Feb. 14, at 8:40 p.m. PST (11:40 p.m. EST) at a distance of approximately 178 kilometers (111 miles). Stardust took 72 high-resolution images of the comet. It also accumulated 468 kilobytes of data about the dust in its coma, the cloud that is a comet's atmosphere. The craft is on its second mission of exploration called Stardust-NExT, having completed its prime mission collecting cometary particles and returning them to Earth in 2006.

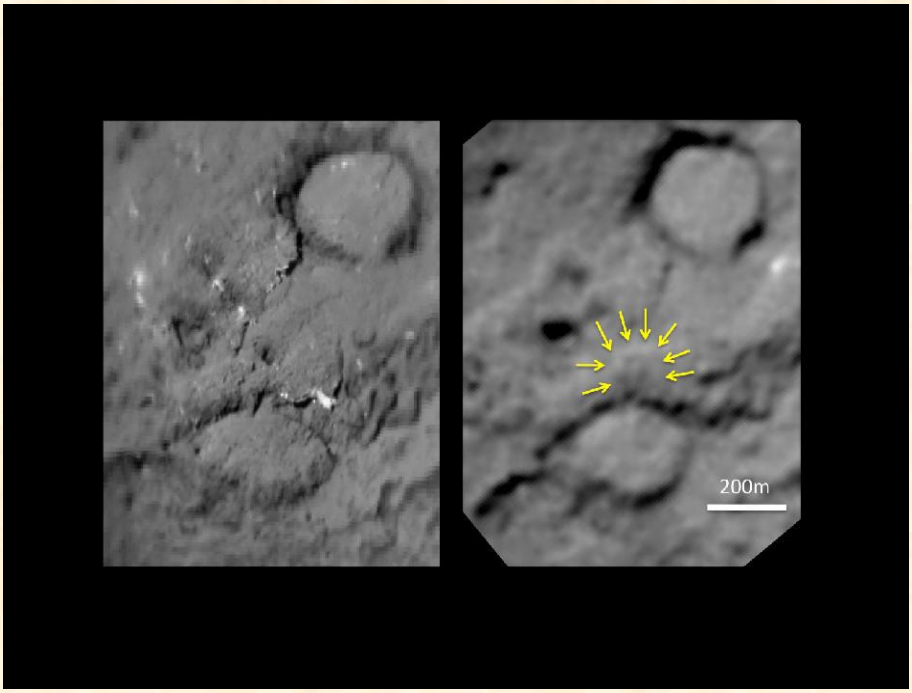
The Stardust-NExT mission met its goals, which included observing surface features that changed in areas previously seen during the 2005 Deep Impact mission; imaging new terrain; and viewing the crater generated when the 2005 mission propelled an impactor at the comet.

"This mission is 100 percent successful," said Joe Veverka, Stardust-NExT principal investigator of Cornell University, Ithaca, N.Y. "We saw a lot of new things that we didn't expect, and we'll be working hard to figure out what Tempel 1 is trying to tell us."

Several of the images provide tantalizing clues to the result of the Deep Impact mission's collision with Tempel 1.

"We see a crater with a small mound in the center, and it appears that some of the ejecta went up and came right back down," said Pete Schultz of Brown University, Providence, R.I. "This tells us this cometary nucleus is fragile and weak based on how subdued the crater is we see today."

Engineering telemetry downlinked after closest approach indicates the spacecraft flew through waves of disintegrating cometary particles, including a dozen impacts that penetrated more than one layer of its protective shielding.



"The data indicate Stardust went through something similar to a B-17 bomber flying through flak in World War II," said Don Brownlee, Stardust-NExT co-investigator from the University of Washington in Seattle. "Instead of having a little stream of uniform particles coming out, they apparently came out in chunks and crumbled."

While the Valentine's Day night encounter of Tempel 1 is complete, the spacecraft will continue to look at its latest cometary obsession from afar.

"This spacecraft has logged over 3.5 billion miles since launch, and while its last close encounter is complete, its mission of discovery is not," said Tim Larson, Stardust-NExT project manager at JPL. "We'll continue imaging the comet as long as the science team can gain useful information, and then Stardust will get its well-deserved rest."

Stardust-NExT is a low-cost mission that is expanding the investigation of comet Tempel 1 initiated by the Deep Impact spacecraft. The mission is managed by JPL for NASA's Science Mission Directorate in Washington. Lockheed Martin Space Systems in Denver built the spacecraft and manages day-to-day mission operations.

Image: This pair of images shows the before-and-after comparison of the part of comet Tempel 1 that was hit by the impactor from NASA's Deep Impact spacecraft. Credit: NASA/JPL-Caltech/University of Maryland/Cornell

Thank Goodness the Sun is Single

This article was written by Trudy E. Bell

It's a good thing the Sun is single. According to new research, Sun-like stars in close double-star systems "can be okay for a few billion years—but then they go bad," says Jeremy Drake of the Harvard-Smithsonian Astrophysical Observatory in Cambridge, Mass.

How bad? According to data from NASA's Spitzer Space Telescope, close binary stars can destroy their planets along with any life. Drake and four colleagues reported the results in the September 10, 2010, issue of *The Astrophysical Journal Letters.*

Our Sun, about 864,000 miles across, rotates on its axis once in 24.5 days. "Three billion years ago, roughly when bacteria evolved on Earth, the Sun rotated in only 5 days," explains Drake. Its rotation rate has been gradually slowing because the solar wind gets tangled up in the solar magnetic field, and acts as a brake.

But some sun-like stars occur in close pairs only a few million miles apart. That's only about five times the diameter of each star—so close the stars are gravitationally distorted. They are actually elongated toward each other. They also interact tidally, keeping just one face toward the other, as the Moon does toward Earth.

Such a close binary is "a built-in time bomb," Drake declares. The continuous loss of mass from the two stars via solar wind carries away some of the double-star system's angular momentum, causing the two stars to spiral inward toward each other, orbiting faster and faster as the distance shrinks. When each star's rotation period on its axis is the same as its orbital period around the other, the pair effectively rotates as a single body in just 3 or 4 days.

Then, watch out! Such fast spinning intensifies the magnetic dynamo inside each star. The stars "generate bigger, stronger 'star spots' 5 to 10 percent the size of the star—so big they can be detected from Earth," Drake says. "The stars also interact magnetically very violently, shooting out monster flares."

Worst of all, the decreasing distance between the two stars "changes the gravitational resonances of the planetary system," Drake continued, destabilizing the orbits of any planets circling the pair. Planets may so strongly perturbed they are sent into collision paths. As they repeatedly slam into each other, they shatter into red-hot asteroid-sized bodies, killing any life. In as short as a century, the repeated collisions pulverize the planets into a ring of warm dust.

The infrared glow from this pulverized debris is what Spitzer has seen in some self-destructing star systems. Drake and his colleagues now want to examine a much bigger sample of binaries to see just how bad double star systems really are.

They're already sure of one thing: "We're glad the Sun is single!"

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

Image: Planetary collisions such as shown in this artist's rendering could be quite common in binary star systems where the stars are very close. Credit NASA Space Place.

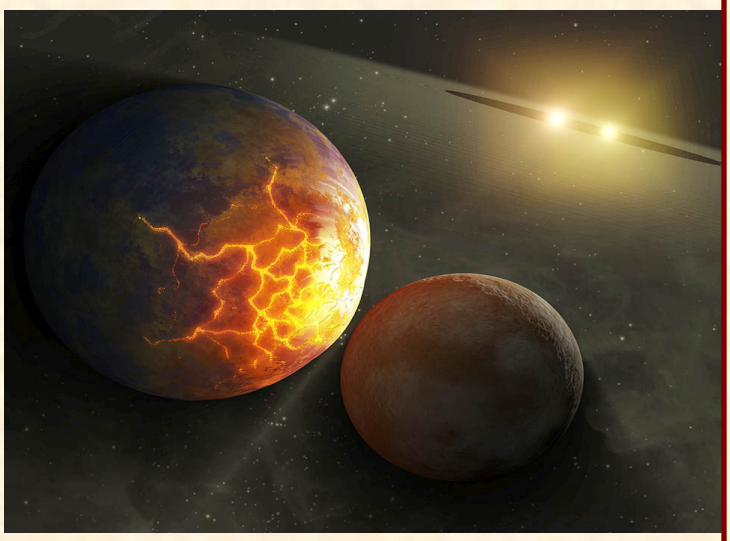
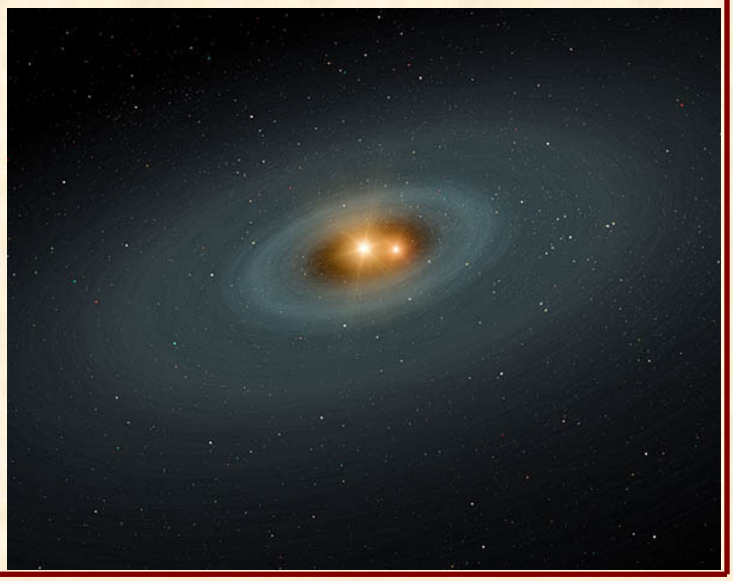


Image below: This artist's concept illustrates a tight pair of stars and a surrounding disk of dust -- most likely the shattered remains of planetary smashups. Using NASA's Spitzer Space Telescope, the scientists found dusty evidence for such collisions around three sets of stellar twins (a class of stars called RS Canum Venaticorum's or RS CVns for short). The stars, which are similar to our sun in mass and age, orbit very closely around each other. Credit: NASA Space Place



Special Announcement

You Are Cordially Invited to:

Great Basin National Park's Annual

WE'RE NUTS!

(night under the stars)

Messier Marathon

Winter Star Party

Saturday March 5, 2011

We invite you to spend a night under the beautiful dark skies of Great Basin National Park for this year's Messier Marathon.

Astronomer's mixer at 4:00pm PST at the
Lehman Caves Visitor Center
Observing begins at sunset

www.nps.gov/grba

Warm room and hot beverages will be provided

Please invite as many people as you would like

Magic Valley Astronomical Society
P.O. Box 445
Kimberly, ID, USA 83341
http://www.mvastro.org/

Snake River Skies is the Newsletter of the Magic Valley Astronomical Society and is published electronically once a month.

Images on the front page: 1. Centennial Observatory courtesy of Chris Anderson, Observatory Manager. The Centennial Observatory is located at the Herrett Center for Arts and Science, College of Southern Idaho, Twin Falls, ID, USA. Chris Anderson also provides the Planispheres usually on page 3.
2. Shoshone Falls is a major attraction to the Magic Valley and a prominent landmark on the Snake River. Falls image is used under "public domain;" unknown photographer.
3. M-51 on the front page was imaged with the Shotwell Camera and the Herrett Telescope at the Centennial Observatory by club members Rick Widmer & Ken Thomason. 4. Star explorers image is an open source photo, photographer unknown.

Membership Information

Membership is not just about personal benefits. Your membership dues support the work that the Magic Valley Astronomical Society does in the community to promote the enjoyment and science of astronomy.

Speakers, public star parties, classes and support for astronomy in schoolrooms, and outreach programs just to name a few of the programs that your membership dues support.

Annual Membership dues will be $20.00 for individuals, families, $10.00 for students.

Contact Treasurer Jim Tubbs for dues information via e-mail: jtubbs015@msn.com or home telephone: 736-1989 or mail directly to the treasurer at his home address. 550 Sparks Twin Falls, ID 83301

Donations to our club are always welcome and are even tax deductible. Please contact a board member for details.

About the Magic Valley Astronomical Society

The Magic Valley Astronomical Society (MVAS) was founded in 1976. The Society is a non-profit [501(c) 3] educational and scientific organization dedicated to bringing together people with an interest in astronomy.

In partnership with the Centennial Observatory, Herrett Center, College of Southern Idaho - Twin Falls; we hold regularly scheduled monthly meetings and observation sessions, at which we share information on current astronomical events, tools and techniques for observation, astrophotography, astronomical computer software, and other topics concerning general astronomy. Members enthusiastically share their telescopes and knowledge of the night sky with all who are interested. In addition to our monthly public star parties we hold members only star parties at various locations throughout the Magic Valley.

MVAS promotes the education of astronomy and the exploration of the night sky along with safe solar observing through our public outreach programs. We provide two types of outreach; public star parties and events open to anyone interested in astronomy, and outreach programs for individual groups and organizations (e.g. schools, churches, scout troops, company events, etc.), setting up at your location. All of our outreach programs are provided by MVAS volunteers at no cost. However, MVAS will gladly accept donations. Donations enable us to continue and improve our public outreach programs.

A moon just past full as seen from Earth's northern hemisphere. Credit NASA

Membership Benefits

Sky and Telescope group rates. Subscriptions to this excellent periodical are available through the MVAS at a reduced price of $32.95.

Astronomy Magazine group rates. Subscriptions to this excellent periodical are available through the MVAS at a reduced price of $34.00

Receive 10% discounts on other selected Astronomy Publications.

For periodical info. and subscriptions Contact Jim Tubbs, Treasurer

Lending Library: Currently we have no books to lend.

Lending Telescopes: The society currently has two telescopes for loan and would gladly accept others. Contact Rick Widmer, Secretary for more information.

Elected Board

Terry Wofford, President
terrywofford@hotmail.com

David Olsen, VP / Newsletter Ed.
editor@mvastro.org

Jim Tubbs, Treasurer
jtubbs015@msn.com

Rick Widmer, Secretary / Webmaster
rick@developersdesk.com