



The Observer

SAN BERNARDINO VALLEY AMATEUR ASTRONOMERS

Member of The Astronomical League

<http://sbvaa.org/>



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Since 1958

April, 2017

Meeting:

April 8, 2017

Location:

First Christian Church
2102 E. Foothill Dr.
San Bernardino, CA

7:00 p.m.

Pre-meeting Dinner,
5:00 to 6:30 p.m.,

Pepper Steak
Restaurant
26589 Highland
Ave.
Highland, CA

After the meeting telescopes will be set up for viewing and members will be available to answer questions. Bring your telescope to observe with us.

***No telescope is too humble,
and beginners are always
made welcome!***

Program

10 Ways To Destroy Earth

From the television series *The Universe*, this is a fun (if scary) way to explore the dangerous physics of the Universe and the properties of the planet we call home.



Scientists discuss 10 different ways of destroying the Earth; including Venus to Earth impact, the Big Burn, Stop the Spin, Black Holes, Turn off the Gravity, Anti-Matter Annihilation, Parallel Worlds Collide.

Participating in the discussion are:

Bruce Betts: The Planetary Society
Feryal Ozel: Astrophysicist, Univ. of Arizona
Alex Fillipenko: Astrophysicist, U.C. Berkeley
Travis S. Taylor: Physicist & Sci-Fi Author
Clifford V. Johnson: Astrophysicist, U.S.C.
Erik Thompson: Narrator

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Calendar of Upcoming Events

March 25, Star Party, Oak Glen

April 4, Outreach, Dominguez School

April 6, Outreach, Mentone School

April 8, Club Meeting

April 29, Star Party, **CANCELLED**

May 2, Outreach, Mariposa School

May 7, Outreach, Pioneer Town

May 13, Club Meeting

May 20, Outreach, Oak Glen

June 10, Club Meeting

Type 1A Super Nova in NGC 5643

By Alison Klesman, in *Astronomy*

A Type 1A supernova occurs when a white dwarf, the remnant of a Sun-like star, grows too massive after stripping a binary companion star of its outer layers. When the white dwarf reaches a critical mass, a runaway fusion reaction occurs in its core and the star explodes in a Type Ia supernova. Such a supernova has just been spotted occurring in a galaxy about 55 million light-years away.



The supernova which was officially announced via [Astronomer's Telegram](#) after an excited tweet by Rachael Beaton at the the Observatories of the Carnegie Institution for Science in Pasadena, CA, and known as 2017cbv (though Beaton has nicknamed it “Bob”), the explosion was spotted in NGC 5643, a spiral galaxy in the constellation Lupus. The area of the sky it inhabits is also part of the area covered by the Carnegie-Irvine Galaxy Survey, a project aimed at gathering optical and near-infrared images of bright Southern Hemisphere galaxies. NGC 5643 was also the home galaxy of SN 2013aa, which occurred in early 2013.

Type 1A supernovae play an extremely important role as rungs on the astronomical distance ladder that allows astronomers to measure the distance to faraway galaxies. They’ve also played a critical role in measuring the accelerating expansion of the universe.

**SBVAA Calendar of Scheduled Events
2017**

April 4, Outreach, Dominguez School

April 6, Outreach, Mentone School

May 7, Outreach, Pioneer Town

May 20, Outreach, Oak Glen

June 23 - 25, GRANDVIEW Star Party



July 8, Summer Social at the Sizzler

July 22, Star Party, Oak Glen

August 5, Annual Club BBQ

September 16, Outreach, Oak Glen

**September 22 - 24, GRANDVIEW Star
Party**

October 28, Outreach, Pioneer Town

November 18, Star Party, Pioneer Town

December 2, Annual Holiday Party
Shakey's, Redlands

2018

January 20, Star Party, TBD

February 17, Star Party, TBD



This image captures the stunning NGC 6535, a globular cluster 22,000 light-years away in the constellation of Serpens (The Serpent) that measures one light-year across. NGC 6535 was first discovered in 1852 by English astronomer John Russell Hind.

(Photo credit: ESA/Hubble & NASA)

Trump Budget Would Effectively Kill NASA Exploration Programs

The (fictional) aliens spoke, and President Donald Trump apparently listened.

The president's 2018 federal budget blueprint, which was released today (March 16), would end work on a proposed NASA mission to put a life-hunting lander down on the surface of Jupiter's ocean-harboring moon Europa.

The blueprint reads: "To preserve the balance of NASA's science portfolio and maintain flexibility to conduct missions that were determined to be more important by the science community, the Budget provides no funding for a multibillion-dollar mission to land on Europa."

This directive is in keeping with the one issued by advanced aliens in famed sci-fi author Arthur C. Clarke's 1982 book 2010: Odyssey Two. "All these worlds are yours — except Europa," the aliens say in a message sent to Earth. "Attempt no landing there."

The blueprint does fund continued development of NASA's \$2 billion Europa Clipper mission, which will launch in the 2020s and investigate the habitability of the Jovian moon (widely regarded as one of the solar system's best bets to host alien life) during dozens of flybys. (The lander concept was an add-on requested by Congress in late 2015; the space agency has been working since then to determine the best way to make a surface mission happen.)

The budget blueprint also cancels NASA's Asteroid Redirect Mission, an effort to pluck a boulder off a space rock and tow the piece to lunar orbit, where it would be visited by astronauts. And the proposal axes four NASA Earth-science projects: The Plankton, Aerosol, Cloud, ocean Ecosystem (PACE) satellite, which would monitor Earth's oceans and atmosphere; the Orbiting Carbon Observatory-3 (OCO-3), which would track atmospheric carbon-dioxide levels from the International Space Station (ISS); the Climate Absolute Radiance and Refractivity Observatory (CLARREO) pathfinder, another instrument that would be installed on the ISS; and, finally, the Deep Space Climate Observatory (DSCOVR).

PACE, OCO-3 and CLARREO are all scheduled to launch in the next few years. But DSCOVR, a joint mission of NASA and the National Oceanic and Atmospheric Administration, lifted off in February 2015 and is currently studying the Earth and space weather.

The newly released blueprint is just a proposal, and a rather skeletal one at that. (Trump administration officials said they will unveil a more fleshed-out version in May.) It's unclear at the moment which parts of the proposal will survive the inevitable back-and-forth with Congress and actually become law.

(For more details, go to Space.com)

If you are a fan of scientific exploration as well as a tax payer, it is well to remember that NASA's budget has historically been about one half of one cent out of every tax dollar assessed. That's right -- half a penny! NASA's budget could be doubled and it would still be a pittance but oh! the potential for discovery.